# Intelligent Boiler Load Optimizer

*The NXM2G system is an intelligent micro –processor based boiler load optimization control system designed to REDUCE ENERGY COSTS by providing optimum thermal efficiency of Low Temperature Hot Water (LTHW) boilers.*

## How It Works:

The NXM2G measures the supply and return temperature via digital sensors and monitors the "call for heat".

- On first firing, the boiler will reach the normal thermostat set point and turn off.
- On the next stage, the NXM2G will check:
   i. For the "call for heat"
   ii. If the boiler supply and return temperatures are within the designed temperature differential settings, and
   iii. If the boiler is required to fire, based on control algorithms.

When this occurs, the NXM2G will hold off the boiler firing (save mode) based on temperature and time, which are both adaptive. This control function will also inhibit the burner from firing on high fire if the boiler load demand is low, thus ensuring the best efficiency for the current system demand. This eliminates the wasted energy caused by standby cycling.



## Value Delivered:

- Clients are observing energy and carbon savings of 10% -- 20%
- Controlling boiler short cycling provides significant energy and maintenance savings
   i. Boilers turn off and on many times, every time it cycles, the boiler purges, which exhausts heat from the system. Reducing these cycles reduce energy input to reheat the boiler.
- Fast Payback with low capital investment

NXM2G-CS
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# Boiler Standby Cycling

Standby cycling on boilers occurs throughout the year, even if the boilers are just providing hot water generation during the summer months. This can be reduced by fitting the NXM2G intelligent boiler load optimization to each boiler. The system identifies and removes standby cycling therefore reducing energy costs and $CO_2$ emissions.



Without M2G optimisation = unnecessary firing

With M2G = reduced firings
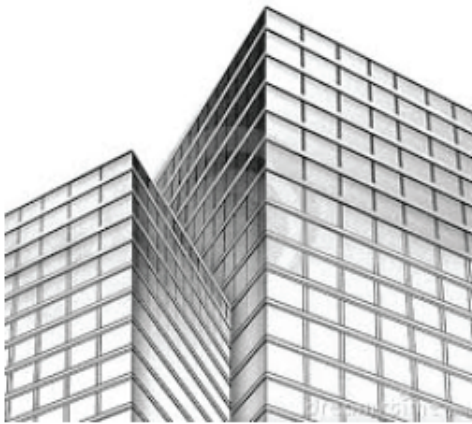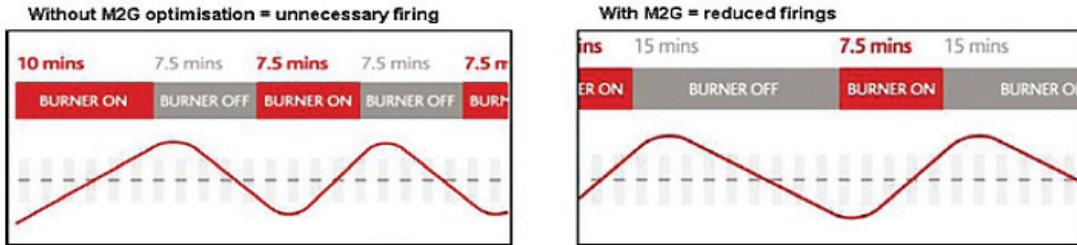


## Applicable Systems:

- Closed loop commercial boilers that use gas, oil, propane and/or LPG for building or process heating
- Single or multiple boiler configurations
- Compatible with existing controls and operations; operates with existing BMS
- Dynamic and self adjusting
- Single Stage, Multi--Stage, or Modulating boilers

### NXM2G SPECIFICATIONS
- Supply Voltage:      120V AC / 60Hz
- Rated Current:       50mA
- Relay Switch Cap:    2A at 120V AC (resistive)
- Fuse Rating:         1.6A @ 120V AC
- Dimensions:          6.9" W x 7.9" H x 2.1" D
- Sensors:             Plug in Digital Therm (2)
- Sensor Range:        131°F to 257°F
- Weight :             3.6 pounds
- Environment:         NEMA 1/IP11
- Min/Max Temp:        32°F to 125°F