# Mighty Therm®

## Gas-Fired Hydronic Boilers 175,000 - 5,000,000 BTU/h
## Ignition Safeguard Systems

**System #1:** Standing pilot with thermocouple flame supervision. 100% safety shutdown on flame failure. 24VAC control circuit. Standard on sizes 175 to 400 U.S. and Canadian.

**System #4:** Intermittent electronic flame supervision. 115VAC control circuit. Responds in less than 0.8 second upon flame failure. Optional on natural gas sizes 500-5000 and U.S propane sizes 500-1825.

**System #9:** Intermittent electronic flame supervision. Responds in less than 0.8 second upon flame failure. 24VAC control circuit. Standard on U.S. sizes 500-1825 natural and propane.

**System #11:** Same as System 9, with the addition of 100% lockout on trial for ignition. Standard on Canadian sizes 500-5000 natural.

**System #12:** Same as System 9. Optional on sizes 175 to 400 U.S. and Canadian.

**System #16:** Standing pilot with electronic flame supervision. Responds in less than 0.8 second upon flame failure and provides 100% safety shutdown. 24VAC control circuit. Standard on Canadian propane sizes 500-5000. Standard on U.S. propane sizes 2000-5000. Optional on natural gas 500-5000.

**System #18:** Same as System 9. Standard on U.S. sizes 2000-5000 natural gas.

**Legend:**
- S = Standard
- O = Optional
- O1 = Available on natural gas sizes 500-5000 and U.S. propane sizes 500-1825
- NA = Not available
- U = Standard in U.S., optional in Canada
- UN = Standard and only available on U.S. natural gas units
- C = Standard in Canada, optional in U.S
- C1 = Standard in Canada and on spark ignition propane, optional otherwise
- CN = Standard and only available on Canadian natural gas units
- 1 = Standard on Canadian propane 500-5000. Standard on U.S. propane 2000-5000. Available on U.S. & Canadian natural gas 500-5000.
- 2 = Not available on sizes 175 & 250
- 3 = Shipped loose
- 4 = Standard on PH & PW models

***NOTE:*** Certain combinations of options may not be available on some units because of size restrictions or incompatibility.

| | Model (Size) | | | |
|---|---|---|---|---|
| | 175-400 | 500-1825 | 2000-2450 | 2800-5000 |
| **Ignition Systems** | | | | |
| system 1 | S | NA | NA | NA |
| system 4 | NA | O1 | O1 | O1 |
| system 9 | NA | U | NA | NA |
| system 11 | NA | CN | CN | CN |
| system 12 | O | NA | NA | NA |
| system 16 | NA | 1 | 1 | 1 |
| system 18 | NA | NA | UN | UN |
| **Firing Modes** | | | | |
| on/off firing | S | O | O | O |
| two-stage firing | O | S | S | S |
| four-stage firing | NA | O | O | O |
| mechanical modulation | 2 | O | NA | NA |
| motorized on/off | NA | O | O | O |
| motorized two-stage | NA | O | O | O |
| motorized modulation | NA | O | O | O |
| **Gas Train** | | | | |
| manual valve | S | S | S | S |
| redundant safety valve | U | U | U | U |
| main gas regulator | S | S | S | S |
| manual firing valve (add'l manual valve) | C | C | C | C |
| additional safety valve | NA | O | O | O |
| motorized safety valve | NA | O | O | O |
| motorized safety with proof of closure | NA | O | O | O |
| pilot gas regulator | S | C | C | C |
| leak test valve | NA | O | O | O |
| high gas pressure switch | 3 | O | O | U |
| low gas pressure switch | 3 | O | O | O |
| normally open vent valve | NA | O | O | O |
| **Control Components** | | | | |
| 100% shutdown on flame failure | S | S | S | S |
| 100% lockout | C1 | C1 | C1 | C1 |
| manual reset high limit | S | S | S | S |
| automatic reset high limit | O | O | O | U |
| flow switch | S | S | S | S |
| pump time delay ($EM^2$) | 4 | 4 | 4 | 4 |
| low water cutoff (with manual reset and test button) | O | O | O | O |
| alarm bell & lights | O | O | O | O |
| alarm contacts & lights | O | O | O | O |
| field-supplied controller connections | O | O | O | O |
| outdoor reset, on/off 1:1 | O | O | O | O |
| outdoor reset, two-stage 1:1 | O | O | O | O |
| outdoor reset, two-stage 1:1.5 | O | O | O | O |
| outdoor reset, motorized modulation 1:1 | NA | O | O | O |
| **Water Ways** | | | | |
| copper tubes | S | S | S | S |
| cupro-nickel tubes | O | O | O | O |
| glass-lined cast iron headers | S | S | S | S |
| bronze headers | O | O | O | O |
| **Codes** | | | | |
| ASME CSD-1 | S | O | O | O |
| IRI | S | O | O | O |
| FM | S | S | S | O |
| Illinios School | O | O | O | O |
| Minnesota | S | O | O | O |
| California | O | O | O | O |
| LDS | NA | O | O | O |

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