



PRODUCT DATASHEET GENESIS GATEWAY

APPLICATION

The Genesis Network delivers full operational awareness and supervisory control over heat trace systems, with low total installed cost and maximum flexibility. Genesis Network connects all heat trace controllers via wireless mesh communications to the control room. In the control room, alarms and performance history are logged and displayed to operators, maintenance teams, and management via a user-friendly browser-based interface accessible from any PC or tablet.

The Genesis Network enables:

- **Increased up-time** resulting from site-wide visibility of all heat trace operating conditions and alarms
- **Optimized alarm settings** tuned to accurately flag outlier behavior and avoid nuisance alarms
- **Fewer maintenance hours** due to rapid diagnoses and troubleshooting of issues and sources of alarms
- **Streamlined maintenance and operations** resulting from the accurate and timely analysis and presentation of data relating to the heat trace system
- **Improved response** to upgrades, expansions, and maintenance activities and the related configuration changes

The Genesis Gateway is the access point between the control room server and wireless mesh network in the field. It manages all communications to and from the Genesis Bridges and network nodes. The Genesis Gateway securely controls the addition and removal of any node on the network. The gateway also manages the deployment and installation of software updates for all Genesis smart devices and controllers.

MAJOR COMPONENTS OF GENESIS NETWORK

- **Thermon Genesis Bridge** – node for wireless mesh communications
- **Thermon Genesis Gateway** – access point to/from the control room
- **Thermon Genesis Server** – supervisory and data analytics software



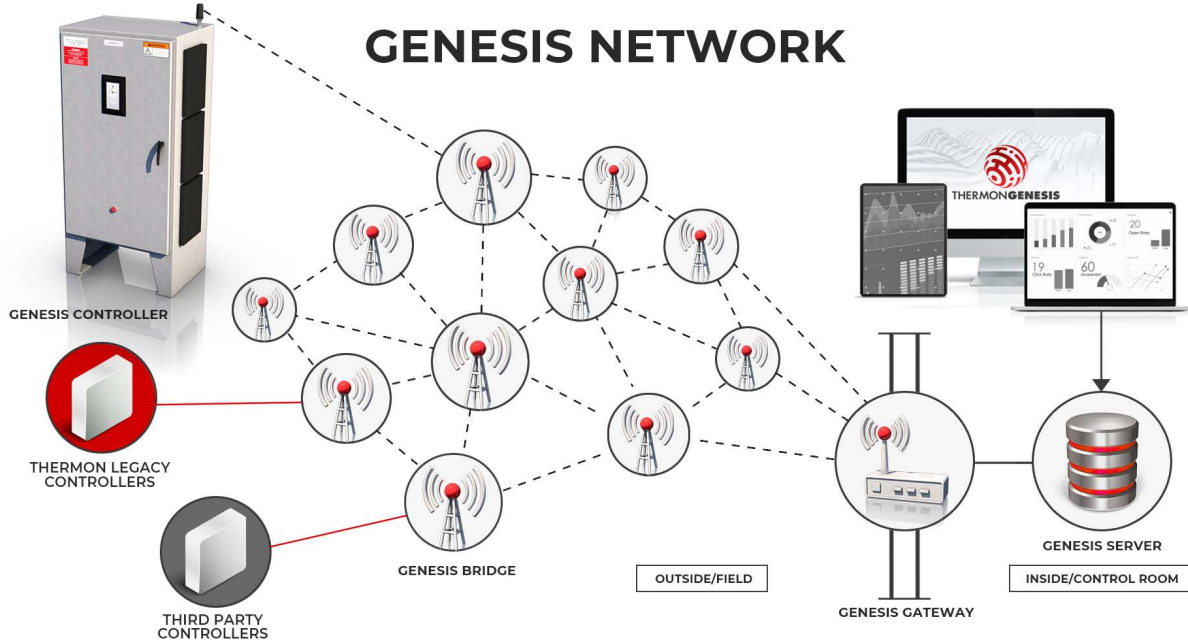
FEATURES & BENEFITS OF GENESIS NETWORK

- **Wireless Communication:** Reduces total cost of ownership by eliminating installation and maintenance of wiring, tray, and/or conduit.
- **Mesh Network:** Maximizes uptime by providing multiple and redundant communication pathways that automatically adjust.
- **Scalable:** Meets simple needs or supports the largest plants and heat trace circuit counts. Up to 1024 nodes.
- **Real-Time:** Superior response time when compared to a traditional Modbus network. Timely alarm reporting and tracking of temperature and current measurements in the control room enables efficiency with troubleshooting issues.
- **Software Updates:** Using smart IIoT technology, easily deploy new software to Genesis Network devices and controllers in the plant and add features over time to realize greater value.
- **Browser Interface:** Users can access the system from any browser (PC or tablet) on the plant network ensuring access from anywhere. Eliminates effort to keep client access points up to date.
- **Communication Options:** May be configured for either wireless (preferred) or wired communication or any combination of wired and wireless depending upon the needs of the site.





PRODUCT DATASHEET GENESIS GATEWAY

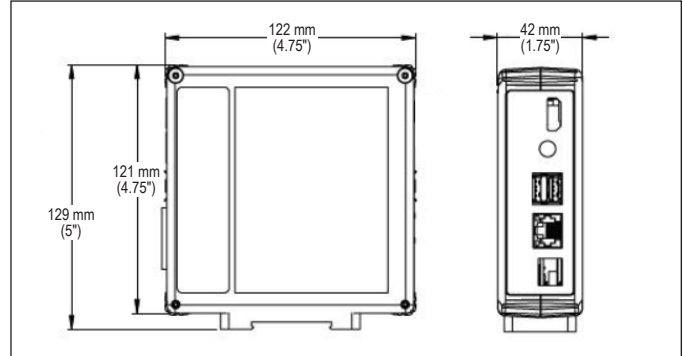
The Thermon Genesis™ Network consists of a control room server, a gateway, and a collection of field deployed bridges/nodes that form a wireless mesh communications network. Alternatively, the network can be made via a traditional wired Ethernet network. The Genesis™ Network connects all heat trace panels and controllers to the control room and gives visibility of all assets from a single dashboard and user interface that can be accessed from any browser.



GENESIS GATEWAY SPECIFICATIONS

Communications (Wired)	1 x Ethernet (10/100/1000) 1 x Ethernet (10/100) 4 x USB 2.0 (Host) 1 x CAN 1 x RS-485 (2-wire half duplex)
Communications (Wireless)	802.15.4 Radio (Mesh) – 2.4Ghz
Wireless Certifications	FCC, IC, CE, MIC, RCM, SIG
Range (Condition Dependent)	100 m (typical)
Max Mesh Nodes	1024
Supply Voltage	5–28 VDC
Max Supply Current	0.8 A
Storage Temperature	-40°C (-40°F) to 85°C (185°F)
Operating Temperature	-40°C (-40°F) to 70°C (158°F)
Enclosure Rating	IP20
Certifications/Approvals	 

PRODUCT DIMENSIONS



ORDERING INFORMATION

Part #	Description
GN-GW	Genesis Gateway: Genesis Gateway communication module; universal mains to 12 VDC power adapter; DIN-rail mountable; 2 dBi omnidirectional adjustable antenna.



PRODUCT DATASHEET GENESIS BRIDGE

APPLICATION

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The Genesis Bridge links panels and controllers to the wireless mesh network. The Genesis Bridge is a more cost effective, flexible, and feature rich method for establishing communication when compared to traditional wired networks.

The Genesis Bridge acts as a repeater for other nodes. It dynamically adjusts to “heal” or “repair” paths within the mesh network. Industrial facilities have numerous obstacles that can interfere with wireless communications, and the Genesis Bridge provides the additional redundant wireless paths to maximize communication success.

Alternatively, bridges can communicate using a traditional wired Ethernet network.

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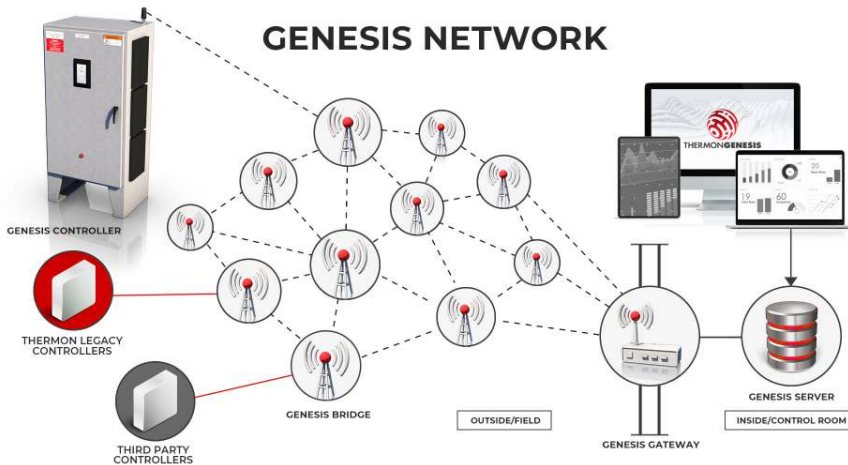
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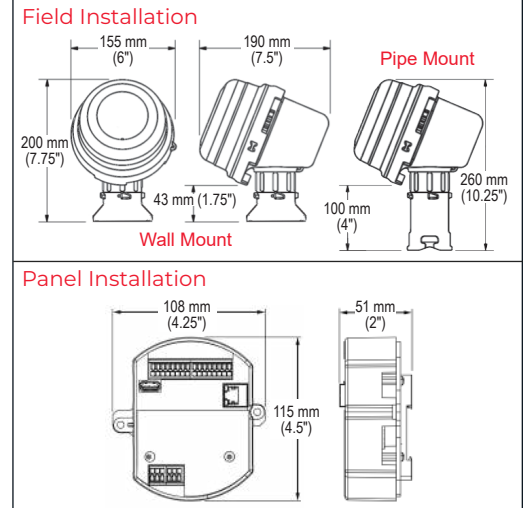


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PRODUCT DIMENSIONS



See Thermon document PN50829 for Wall Mount Kit installation procedure.

GENESIS BRIDGE SPECIFICATIONS

Communications (Wired)	1 x Ethernet (10/100) 1 x USB 2.0 (Host) 1 x Isolated CAN 1 x Isolated RS-485 (4-wire full duplex) 1 x Isolated RS-485 (2-wire half duplex)
Communications (Wireless)	802.15.4 Radio (Mesh) – 2.4Ghz Wi-Fi – 2.4Ghz
Wireless Certifications	FCC, IC, CE, MIC, RCM, SIG
Range (Condition Dependent)	100 m (typical)
Max Mesh Nodes	1024
Sensor Inputs	2 x RTD (intrinsically safe)
Storage Temperature	-40°C (-40°F) to 85°C (185°F)
Max Power Consumption	5 Watts

Field Installation (Installed In Terminator® Field Junction Box)

Supply Voltage	100-277 VAC, 50-60Hz ±10%
Enclosure Ratings	TYPE 4X, IP66
Operating Temperature	-40°C (-40°F) to 60°C (140°F)
Certifications/Approvals	-40°C ≤ TAMB ≤ +60°C Class I, Division 2, Groups A, B, C, and D

Panel Installation (Module Only)

Supply Voltage	11 – 25 VDC
IP Rating	IP20
Operating Temperature	-40°C (-40°F) to 85°C (185°F)
Certifications/Approvals	-40°C ≤ TAMB ≤ +85°C Class I, Zone 1, AEx ec mc [ib Gb] IIC Gc Class I, Division 2, Groups A, B, C, and D Ex ec mc [ib Gb] IIC Gc [ib Gb] Class I, Division 2, Groups A, B, C, and D. Ex ec mc [ib Gb] IIC Gc II 3 (2) G Ex ec mc [ib Gb] IIC Gc

ORDERING INFORMATION

Part #	Description
GN-B-XP	Genesis Bridge—Pipe Mount Kit: Genesis Bridge communication module; Internal antenna; Universal AC mains input; IP66 Terminator® pipe mount power connection kit and enclosure mountable on insulated or non-insulated pipe.
GN-B-WP	Genesis Bridge—Wall Mount Kit: Genesis Bridge communication module; Internal antenna; Universal AC mains input; IP66 Terminator® wall mount power connection kit and enclosure mountable on walls, frames, rails, and beams.
GN-B-A-XP	Genesis Bridge w/External Antenna—Pipe Mount Kit: Genesis Bridge communication module; Universal AC mains input; connection for external antenna; IP66 Terminator(R) pipe mount power connection kit and enclosure mountable on insulated or non-insulated pipe. (GN-AK-ORD or GN-AK-HAZ also required but not included.)
GN-B-A-WP	Genesis Bridge w/External Antenna—Wall Mount Kit: Genesis Bridge communication module; Universal AC mains input; connection for external antenna; IP66 Terminator(R) wall mount power connection kit and enclosure mountable on walls, frames, rails, and beams. (GN-AK-ORD or GN-AK-HAZ also required but not included.)
GN-B-A	Genesis Bridge—Panel Mount Kit: Genesis Bridge communication module; 24VDC power input; DIN-rail mountable; connection for external antenna. (GN-AK-ORD or GN-AK-HAZ also required but not included.)
GN-AK-HAZ	Antenna Kit—Hazardous Locations: Exterior mount antenna; 6 ft. antenna cable; IP66 hazardous area cable gland; antenna mounting bracket and hardware.
GN-AK-ORD	Antenna Kit—Ordinary Locations: Exterior mount antenna; 6 ft. antenna cable; IP66 ordinary area cable gland; antenna mounting bracket and hardware.