Network Connections

The eGauge meter can be connected to a users TCP/IP network using Ethernet, HomePlug, or WiFi communication (although these connections are not required, they grant increased functionality and the ability to view the meter remotely). Related articles are found at the bottom of this page.

The eGauge listens for incoming connections from the local network for the following services:

- HTTP Web service (TCP port 80): This provides the normal user interface to access and manage the eGauge device. If desired, this port could be exposed to the Internet through a suitable firewall rule (e.g., a rulewhich forwards accesses to port 8080 to the eGauge device at port 80). The proxy service allows this service to be accessed remotely normally without requiring changes to the local network firewall or router.

- HTTPS Web service (TCP port 443) **[not supported on eGauge2 or EG30xx models]**: This provides secured access to the eGauge device's web server interface.

- SSH service (TCP and UDP port 22): **[disabled by default*]** The secure-shell (SSH) service is used for factory maintenance and servicing only and is protected by a unique password only known to the manufacturer. This port should not be exposed to the internet unless requested by eGauge Systems for advanced troubleshooting. *This service has been disabled by default starting in firmware v3.02.

- mDNS service (UDP port 5353) : The multi-cast domain name service (mDNS) makes it possible to access the eGauge interface via the local network by accessing http://devname.local/ or http://devname/, where devname is the eGauge device name. The mDNS service may also be known as "Avahi" or "Bonjour" on some operating systems.

- BACnet IP service (UDP port 47808): **[disabled by default]**: The Building Automation and Control network service can be enabled in **Settings -> BACnet**. If enabled, the eGauge will listen for BACnet master requests on UDP port 47808.

- Modbus TCP service (TCP port 502*): [**disabled by default]**: The Modbus TCP service can be enabled in **Settings -> Modbus Server**. If enabled, the eGauge will listen on for Modbus master requests on TCP port 502. *The TCP port can be changed by the user in the appropriate menu.

The eGauge maintains the following outbound connections to the internet:

- Classic HTTP Proxy server connection (TCP port 8082): The eGauge will attempt to establish and maintain a connection to the proxy server configured in **Settings -> General Settings -> Proxy-server hostname**. This provides web server access to the eGauge's interface via the proxy server URL, for example, http://**DEVNAME**.egaug.es/ or http://**DEVNAME**.d.egauge.net/ where **DEVNAME** is your eGauge device name. This connection can be disabled by configuring the Proxy-server hostname setting to the number 0 (zero). This connection is not used on EG4xxx starting in firmware v4.0.

- Classic HTTPS Proxy server connection (TCP port 8084) [unavailable on eGauge2 or EG30xx models]: The same as the HTTP Proxy server connection, but encrypted. **NOTE: this is required for proxy-server connectivity on EG4xxx** models starting in firmware v4.0. This connection can be disabled by configuring the Proxy-server hostname setting to the number 0 (zero).

- NTP time synchronization (UDP port 123*): The eGauge utilizes the NTP service for time synchronization. By default, servers are determined by querying {0..3}.north-america.pool.ntp.org which expands to 0.north-america.pool.ntp.org, 1.north-america.pool.ntp.org, 2.north-america.pool.ntp.org, and 3.north-america.pool.ntp.org. This can be configured in **Settings -> Date & Time -> Time-server (NTP) hostname**. *eGauge2 and EG30xx model devices uses the standard NTP protocol which required bidirectional UDP port 123, while newer model eGauges use the OpenNTP service which is backwards compatible with standard NTP, but can use a random high-numbered port on the client.

- eGauge.io server connection (TCP port 8084): Introduced on EG4xxx meters starting in firmware v4.4, egauge.io is a new version of the proxy client intended to replace the "Classic HTTPS" proxy server. This connection is independent of the Classic proxy server connections. When enabled and connected, egauge.io allows meters to connect to proxy.egauge.io and be accessible at https://**DEVNAME**.egauge.io. This connection can be configured using the

JSON WebAPI under /config/net/goproxy as well as through the Modern Interface in Setup -> Network -> Proxy Server. The egauge.io connection is only supported for EG4xxx meters and not available on legacy meters such as EG30xx and eGauge2.

> eGauge.io currently runs in tandem with the classic proxy server. The classic proxy-server is still the primary and recommended method for accessing eGauge2, and EG3xxx meters. Meters shipped after January 1, 2024 will automatically default to the eGauge.io proxy. For information regarding switching your EG4xxx meter sold prior to the start of 2024 to eGauge.io please see: eGauge.io Service

Other External resources

- Firmware upgrades: When a firmware upgrade is performed on a device, the eGauge downloads the signed firmware file via HTTP call to egauge.net. Some firmware versions allow firmware to be uploaded from the browser rather than downloaded from the egauge.net server.

- Dynamic resources: Some content on the eGauge may need to updated more often than firmware releases are performed. Currently, this is limited to the list populated in Settings -> Data Sharing. When these dynamic resources are required, the eGauge makes an HTTP call to egauge.net to gather this information.

- Content delivery network: When accessing newer features of the eGauge (such as the waveform view) through the proxy-server connection, the interface may have the browser request JavaScript and other resources from a separate eGauge server if it will load faster than having the data come from the eGauge through the proxy server.

- The eGauge by default uses DHCP. If the eGauge is unable to obtain a DHCP address, it will default to 192.168.1.88. It will continue to request a DHCP address and will obtain one when the service is available. It should not take more than 15 minutes to obtain an IP after the server is available. A static IP may be configured in Settings -> Network Settings.

Related Articles

eGauge Proxy Server Security and Functionality

HomePlug Security Considerations
