



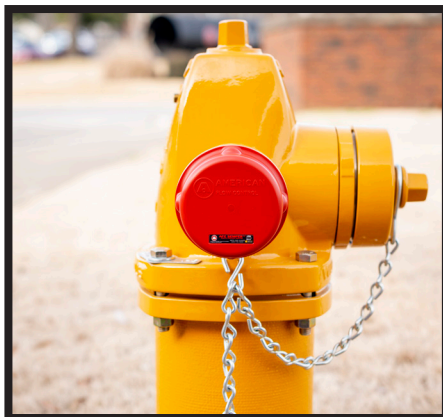
WIRELESS, BATTERY-POWERED PRESSURE AND IMPULSE MONITORING

Pressure Monitoring with Transient Waveform Capture

The AFC SEMPER[®] RPM is an ideal solution for pressure monitoring, transient analysis, fire flow testing, customer pressure concerns, and hydraulic model calibration. The AFC SEMPER RPM measures water pressure at user programmable rates up to 256 samples per second with an internal pressure transducer. The monitor then computes a combination of the minimum, average and maximum values according to your selection of statistics and recording intervals. For example, you can measure and store the maximum, minimum and average pressure at 5-minute intervals for more than 90 days (when impulse monitoring is disabled).

The impulse recording option feature of the AFC SEMPER RPM unit stores the waveform of captured transients. The SEMPER RPM can store up to 125 events of variable duration that may occur over many months of on-site monitoring, up to a maximum rate of 256 samples per second and a total of 42,000 data values.

When combined with remote monitoring software, the AFC SEMPER RPM provides a GIS-centric cloud and mobile platform. This platform allows users to monitor system pressures, as well as transients and trends, min, max and average pressure history at any user defined interval. Hydrant pressure monitors can store data internally for many months and wirelessly transmit on a defined schedule and provide alerts and alarms in response to pressure faults or transients, delivering a complete solution for proactive pressure and leakage monitoring and management.



Wireless Communication

The power of every AFC SEMPER RPM from AMERICAN Flow Control[®] is its wireless data transfer capability. Using cellular technology enables unmanned monitoring of remote sites as well as instant updates and alarm notifications. The AFC SEMPER RPM uses a low power, LTE/Cat M cellular communication modem certified on Verizon Wireless[™].

Battery Power

All AFC SEMPER RPM remote pressure monitors have low power requirements so they can be battery operated. The AFC SEMPER RPM uses a user replaceable BP-4 lithium battery pack. The battery life of an AFC SEMPER RPM depends on the sampling resolution chosen in addition to the call schedule. With user configurable call and sampling rates, you get to choose the best configuration for your application.

Packaging and Installation

Every remote pressure monitor from AFC is a low-profile, rugged unit that is easily installed by one person on a standard 2.5-inch hose nozzle outlet. For ease of mind, an optional security cover can be used to prevent vandalism. Once installed, data is immediately available using the range of Trimble software solutions on the cloud or on premise.

Software Support

The AFC SEMPER RPM is compatible with all software applications, including Remote Monitoring Software and Telogers[™] for Windows[®] application software. This ensures that utilities have a complete solution addressing all their remote monitoring needs across their operations, delivered in a manner that suits each individual utility's operations and IT needs.

Applications

- ▶ Customer pressure complaint investigation
- ▶ Pressure loss testing
- ▶ System pressure monitoring
- ▶ Water hammer monitoring
- ▶ Calibrating hydraulic models
- ▶ Fire flow testing
- ▶ Hydrant capacity testing
- ▶ High speed sampling to 256 samples/second

Features

- ▶ Lift & Shift - Installation of monitor is not permanent and the monitor can be moved to other locations.
- ▶ Wireless Communication - Monitor reports pressure data via internal cellular modem.
- ▶ Bluetooth[®] Capable - Monitor allows for wireless connectivity.
- ▶ Alarm Notification - Email and text notification capable based on user set pressure settings.
- ▶ GIS Capable - Allows data to remain with a specific hydrant location.
- ▶ Long Battery Life - Up to 5-year battery life depending on settings and use.
- ▶ Software Compatible - Data transmitted from the monitor seamlessly integrates with Remote Monitoring Software.
- ▶ Data Sampling - Monitor can be programmed to sample pressures up to 256 samples/sec for a maximum of 8 hours.

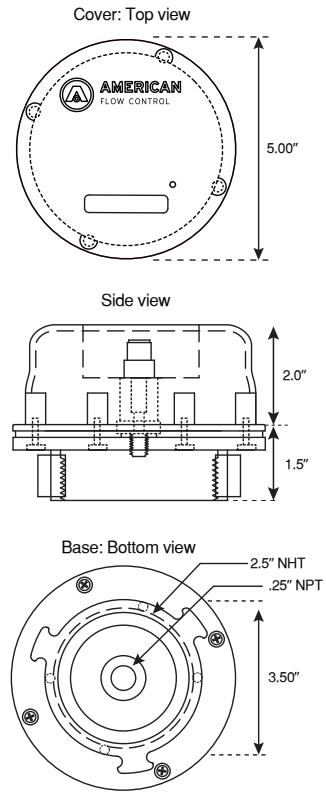
Benefits

- ▶ Reduce non-revenue water, proactively prevent main breaks and identify leaks.
- ▶ Improve customer service and service response times.
- ▶ Monitor and optimize water system supply and operations.
- ▶ Real-time situational awareness and analytics relative to system pressure and supply.
- ▶ Monitor continuously acquires data at up to 256 samples/sec to ensure a transient wave is captured from beginning to end, therefore eliminating the potential to missing the transient event.

AFC SEPMER® RPM SPECIFICATIONS

MONITOR MODEL: AFC-20-1025

Type	Strain gauge, isolated pressure sensor with wireless
Range (psi)	-15 to 300 (contact Badger Meter Support for other ranges)
Over Pressure (psi)	600
Burst Pressure (psi)	1000
Resolution	0.025% of full scale, 12-bit
Accuracy	-0.25% of full scale at constant temperature
Temperature Effect	-0.015% of full scale per °F
Recording	
Sample Rate	Programmable from 256/sec up to 8 hours
Data Recorded	Selectable min, max and average pressure per interval
Interval Period	Programmable from 1 second to 8 hours
Memory Total	~82,000 data values (Shared between Impulse and normal data)
Impulse On	Note: Normal mode operates as specified above when impulse mode is on or off.
Data Recorded	Normal mode interval data plus transient event waveforms including pre and post transient event data, user configurable.
Transient Trigger	Pressure rate-of-change; either positive or negative; user configurable
Impulse Memory	Up to 125 transient events maximum of 41,000 Data Values. after which new data will overwrite oldest data.
Communication	
Cellular	Internal Telog WM2/L1 cellular modem LTE Category M certified Verizon Wireless™
Local Bluetooth® BLE 4.1	Bluetooth low energy max range is 20 feet in open field line of site.
Battery	Factory installed, field replaceable Telog BP-4 lithium battery pack
Battery Life	Up to 2800 data calls to host computer
Examples:	5 years with Daily Data Transfers, 4 Samples per second (HPR-32Ai) 2 years with Daily Data Transfers, 128 Samples per second (HPR-32Ai) 1 year with Daily Data Transfers, 256 Samples per second (HPR-32Ai) (@ medium to excellent signal strength)
Support Software	
S-3PC	Telogers for Windows® 6.77 or later
DHS-Service	Telog® Online
TW-UNITY	Remote Monitoring Software
Environmental	
Temperature	
Operating	40° to 150°F [4° to 66°C]
Storage	-40° to 150°F [-40° to 66°C]
	Note: For applications below this operating range please contact your AFC Sales Representative.
Humidity	0-100% relative humidity
Enclosure	NEMA 4x/IEC IP65
Size	5" diameter x 3.5" [127mm diameter x 89mm]
Thread*	Hydrant mount: 2.50" NHT standard
(see side view)	Contact AFC for non-standard thread
Internal mount:	1/4" NPT
Security Cover	High impact nylon security cover. Lockout hasps included.



High impact nylon security cover.



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