PSC LIFT STATION PROFILER RUN TIME METER
Theory of Operation

Functional Purpose:

Waste water lift stations have a wet well and at least 1 pump. The pump(s) will turn on and off based on the level of waste water in the wet well. When a pump turns on, it is considered the start of a cycle event. The PSC LIFT STATION PROFILER RUN TIME METER times how long the pump(s) are on and off during the cycle. GPM and MGD are also computed by the PC software based on user entered GPM rates. An SD card CSV file report entry is made when all pumps turn off to record the times on and off for each pump during the event. The PC software generates a combined CSV file of all run times, GPM, and MGD for the user.

Hardware Functional Operation:

The PSC LIFT STATION PROFILER RUN TIME METER will monitor the on and off cycles via 7 digital inputs that can accept 24VDC or 120VAC. A Horner XL4 OCS program uses timers to keep track of the digital input on and off times.

The PSC LIFT STATION PROFILER RUN TIME METER will also monitor a digital input that indicates AC power status. Because the meter has a battery backup system, it will be able to continue running for some time yet to be determined. Once power is restored, an alarm report entry will be added to the SD card alarm report file indicating the start and end time of the power failure event.

A 3/4G cellular modem with WiFi hotspot capability provides the wireless configuration, diagnostics, and data collection functionality.

Software Functional Operation:

A Windows 10 PC program is used to collect and process the CSV files generated by the meter. This is done via a 3/4G cellular or WiFi connection. The program can also provide diagnostics information for troubleshooting purposes.

Horner OCS WebMI Functional Operation:

The PSC LIFT STATION PROFILER RUN TIME METER serves its own diagnostics web page. This provides a means of diagnostics without the need of the PC software. So it is viewable with any device capable of viewing a web page including a tablet or mobile phone.