

Hunter Industries Gateway And Hunter Industries Protocol Driver (FS8705-33)

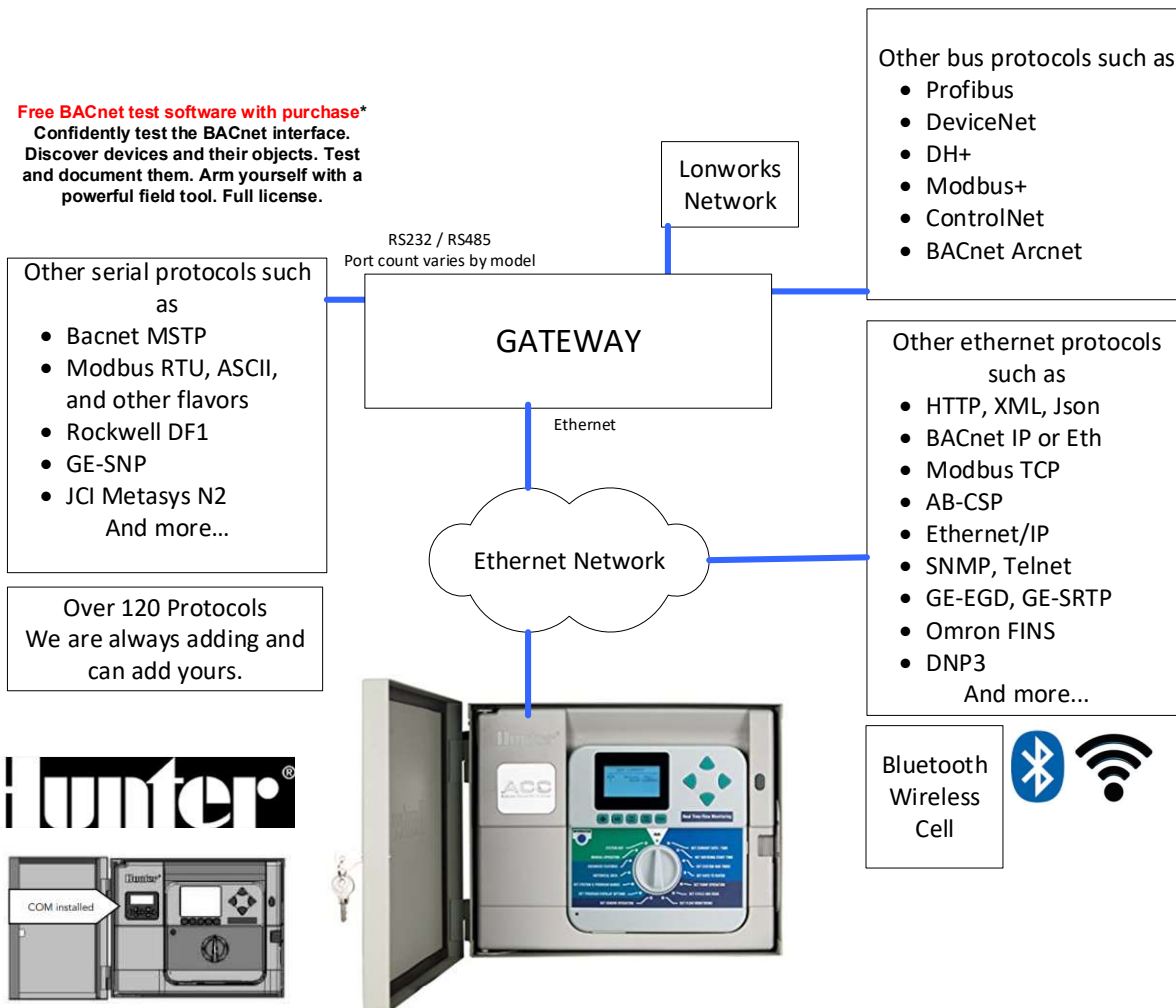
Description

The Hunter ACC protocol can be used to connect to suitably enabled Hunter Industries controllers such as the ACC99 Irrigation Controller. The Driver can read and write data, change settings and issue commands to the irrigation system. A single gateway can connect to multiple controller's using this driver.

The Gateway will be an active client in communications with the Hunter controller. This means that the gateway will issue messages to read/write data. The Hunter Controller ACC99D will be a passive server, waiting silently for messages from the gateway to which it will respond. The data read will be cached for serving via a 2nd protocol such as DNP3 to Cimplicity or Modbus / BACnet for a building management system. Any of the over 140 protocols in the gateway library may be connected to the Hunter Driver.

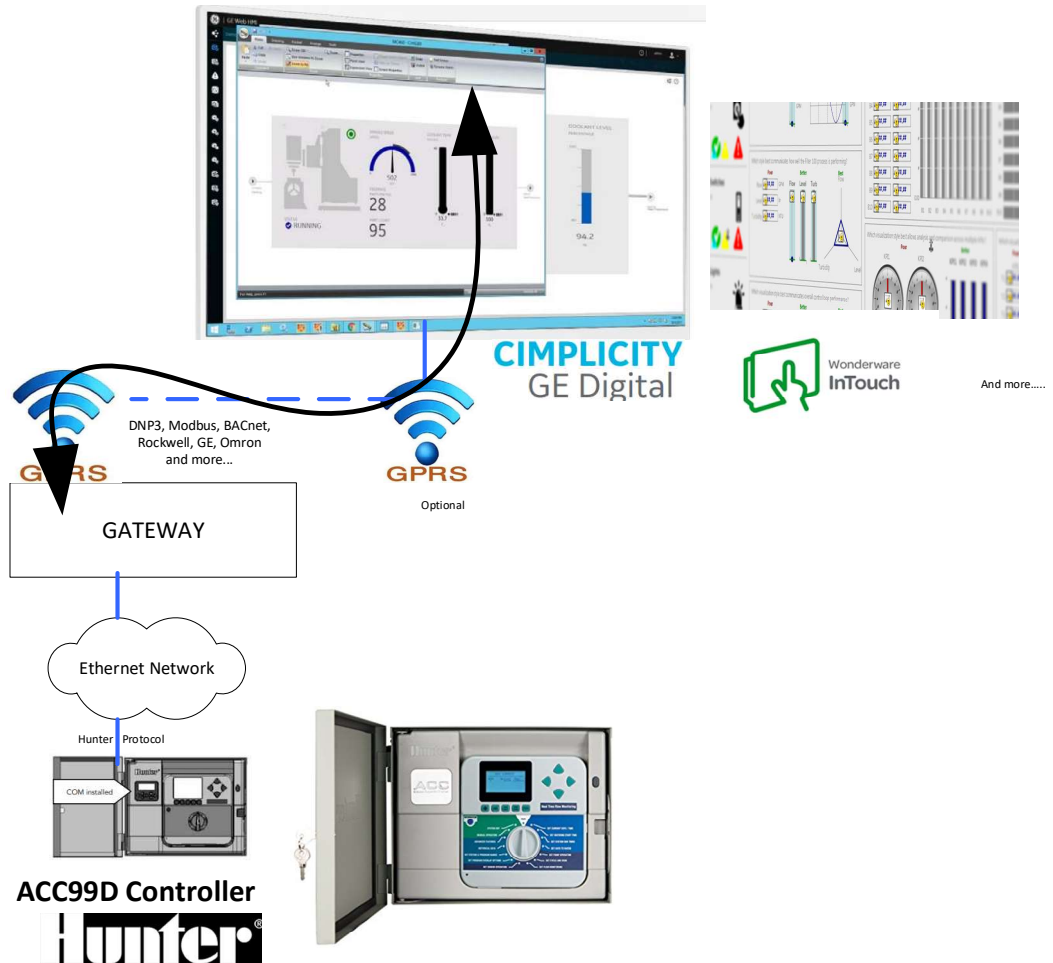
Typical Block Diagram

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Sample Project Block Diagram.

In this sample the Irrigation Sites are monitored from a central location. The Central uses DNP3 (Primary function of Central Station is Power Management). The DNP3 connection is made by means of the mobile network.



List of Supported Commands and Services

A full description of each service and the data variables each service reads , writes is available in the driver manual.

Google = "FS-8705-33 Hunter Industries ACC Irrigation Controller.pdf"

	Command / Service
1	Set Field Controller System Globals
2	Read Global
3	Mute
4	Reset Mute
5	Report versions
6	Set Station Parameters
7	Set Controller Start Time Options
8	Set Field Controller Program header Data
9	Set Global Seasonal Adjust
10	Stop and Delete Stations
11	Stop a Program
12	Purge Log
13	Report Field Ctrlr Header
14	Stop Irrigation Command
15	Programmable Off
16	Suspend Irrigation
17	Cancel Programmable Off
18	Cancel Suspend
19	Start Manual All Station
20	Set System Event Mode
21	SetFCP Mode
22	Clear Field Controller Display
23	Set Pause Mode
24	Cancel pause Mode
25	Start Manual One Station
26	Start Custom Manual Program

Details of the most commonly used services and data variables are provided in the sections that follow the table below.

27	Report Stations On
28	Report Mode/Alarms
29	Read Contoller Log
30	Read Station Log
31	Read Alarm Log
32	Report Current Flow Data
33	Report Sensor Data
34	Report Flow Totals Ctrlr
35	Report Flow Totals Program
36	Report Flow Detail Data
37	Report Comm Module Globals
38	Report Comm Module Firm Rev

Client Server Model & Data Flow

Data flow is Bi Directional. The central station will be able to read and write parameters and issue commands.

The Gateway will be an active client in communications with the Hunter controller. This means that the gateway will issue messages to read/write data. The Hunter Controller ACC99D will be a passive server, waiting silently for messages from the gateway to which it will respond. The data read will be cached for serving via DNP3 to Cimplicity

A number of **data manipulation tools** such as the ability to scale values, perform arithmetic, logic operations, bit extraction, bit packing, conversion to / from Real and Integer types etc.

This data is shared with another protocol. For example DNP3 for the power industry, BACnet for the building automation industry. Any of the over 140 protocols available in the FieldServer library can be linked. More than 2 protocols can be used in the same gateway. You could share the irrigation data with Modbus and BACnet if required.

The 2nd protocol can be configured to be a server or a master or even both. So you can read Flow data and write it to another device using a protocol like Modbus. Or you can read the flow data and serve the data to a remote client using the 2nd protocol

Supported Services and Data - Most Commonly Used

The Central station (example Cimplicity) can execute the following services

Service

Change the 6 programs with all the

- 1 variables associated with them (1..6)
- 2 Start/stop Programs (1..6)
- 3 Start/stop Stations (1..99)
- 4 Read the daily Flow
- 5 Read the Station Activity Log
- 6 Read the Alarm Log
- 7 Set the Date and Time

Change 6 programs

The following program parameters may be read/ changed

Program Parameters

- 1 10 start times per program
- 2 Irrigation days (days of the week, ODD\EVEN, Day interval)
- 3 Program Stack/overlap
- 4 Seasonal Adjust
- 5 Run times

Exposed Variables / Data Objects

Program Parameters

1 set for each program

Param	Number of items if more than 1	Analog or Binary Point	Notes
Mode:			
StartTime	x10	A	
SchedType		A	
Sched		A	Days of week etc
Sched - Program Day - Monday			
Enable		B	
Sched - Program Day - Tuesday Enable		B	
Sched - Program Day - Wednesday Enable		B	
Sched - Program Day - Thursday Enable		B	
Sched - Program Day - Friday			
Enable		B	
Sched - Program Day - Saturday Enable		B	
Sched - Program Day - Sunday			
Enable		B	
Sched - Program Day - Odd			
Day Enable		B	
Sched - Program Day - Even Day Enable		B	
Sched - Program Day - Day Interval Enable		B	
IntLength		A	
IntNextWater		A	
SeasAdj		A	
NwwStart		A	
NwwEnd		A	
StaDly		A	
isRunning		B	
Startcmd		B	
Stopcmd		B	

Alarm Log

The alarm log record consists of 5 fields which together provide information and details about the alarm event.

There are 96 Sets of these objects

Param	Number of items if more than 1	Analog or Binary Point	Notes
Idiom		A	Alarm Category
Field1		A	Alarm reason Sensor/Pump/Program
Field2		A	Number
Field3		A	Other
Field4		A	Other
PurgeLogcmd		B	When commanded clears log

Station Log

The station log record consists of 5 fields which together provide information and details about the event.

There are 96 Sets of these objects

Param	Number of items if more than 1	Analog or Binary Point	Notes
Idiom		A	Event Category Event reason Sensor/Pump/Program
Field1		A	Number
Field2		A	other
Field3		A	other
Field4		A	When commanded clears log
PurgeLogcmd		B	

Flow Data

Param	Number of items if more than 1	Analog or Binary Point	Notes
flowToday		A	
flowyesterday		A	
flowWTD		A	
flowMTD		A	
flowYTD		A	

Support

Please contact Chipkin Automation Systems directly for driver support.
 The following responses are supported.

Revision History

Date	Resp	Format	Driver Ver.	Doc. Rev.	Comment
2019Feb14	PMC		0.00	0	Released.