

# Rain8net

Updated 5/2/08

## Description:

A 12 position terminal strip is found on both the slaves and master. Only the master requires a 24 VAC source on 11 & 12. The valves on all units, both master and slave, connect in the usual manner.

There is a single RS232 (RJ12 jack) connection between the controlling PC and the "master" Rain8. The 24VAC power and network communications are transferred from master to slave-to-slave etc.

The network connection for the slave units is an 8-conductor RJ45. Each unit has a pair of these modular jacks to pass on data and power to the next one in a daisy chain. Each slave unit also has a 6-conductor RJ12 RS232 connection that is used only to assign the address during the initial configuration.

## Protocol normal operation

All data in and out is formatted in 3 byte code groups. Configure port as 4800 bps N-8-1. DTR & RTS should be taken high to provide power for the initial configuration.

A great program from Docklight allows you send and received hex commands directly to a Rain8net. Download it here: [http://www.docklight.de/download\\_en.htm](http://www.docklight.de/download_en.htm)

## Inbound to the Rain8 Zone ON & OFF control

First byte = header (40h)

Second byte = address (01h - FEh)

Third byte =

Zone number (1 – 8) in lower nibble and

Command (3 = ON & 4 = off) in upper

**example:** zone1 on = 31h, zone1 off = 41H

The response of the Rain8 is to execute any command then send back the same three bytes as an ACK.

## Status Request Response

First byte = 40h

Second byte = module address in hex

Third byte = F0h

The third byte of the Rain8net response is the bit pattern of active zones.

For example if zones 1, 2 & 8 are active the binary response would be 10000011 or B3 hex

If the address in the second byte does not match with any Rain8 active on the network, no response is transmitted back.

## COM Check

A COM check can be made sending 70h in the first byte. The remaining two bytes can be anything. If there is any Rain8 on line it will send back three bytes.

## **Global All Off**

First byte = header (20h)  
Second byte = 55h  
Third byte = 55h

Turns off all zones regardless of address. Does not respond back.

## **Input Features**

### **Read rain switch status**

Send:

First byte = 50h  
Second byte = module address in hex  
Third byte = EFh

Responds with 50h & EFh in first two bytes and 00 if switch closed or 64h if switch open, in third byte  
No response if no address match or if rain sensor option not enabled

### **Read flow meter counter**

Send:

First byte = 50h  
Second byte = module address in hex  
Third byte = E0h

Responds with 50h in first byte and 16 bit counter value in last two bytes  
No response if no address match or if flow meter option not enabled

### **Clear flow meter counter**

Send:

First byte = 50h  
Second byte = module address in hex  
Third byte = E7h

Responds by echoing back above command  
No response if no address match or if flow meter option not enabled

## Initial configuration:

### Important!

If you proceed further, verify that a single Rain8 is connected to the PC's COM port by means of its RS232 config connector (used only for this function).

### Initial setup (default run time assignment):

The address assignment is the first byte (byte 0) in a string of 32 bytes.

Later beta unit and all production ones incorporate user selectable default run timers. Setting a control bit as described below enables this feature. Each zone has a unique timer that can be set from 1 to 255 minutes. If enable, and no OFF command is received before any zone times out, it will automatically turn off.

### Inbound to the Rain8, set timers and assign address

1. First byte = 21h Second byte = 21h Third byte = 21h
2. Rain8 responds with a 22h (go ahead)
3. Rain8 will now look for 32 bytes from PC:

**Byte 0 is the address (1 to 254) that this unit will be assigned**

Bytes 1 – 5 not used at this time

**Byte 6, Bit 0 must be set to enable timers**

**Byte 7 must be set to 55h**

Bytes 8 – 17h not used at this time

**Bytes 18h – 1Fh contain the 8 timers settings (1 – 255)**

### Note:

#### If:

1. Byte 0 (address) is not between 1 and 254
2. Or byte 7 not equal to 55h
3. Or any timer value equal to 0

An error code 42h will be returned and download canceled.

A valid download will return 63h.

### Inbound to the Rain8, read settings

First byte = 23h Second byte = 23h Third byte = 23h

Rain8 responds with 32 bytes of data with the same format as described above