

Rain8UPB protocol

In the example below we have assigned the Rain8upb a NID of 3 and a module number of 1 (DID = 1 for first circuit), were you to send the ON command below, Rain8UPB ckt #1 would turn on.

A single NID is utilized for all irrigation functions and Rain8UPB module numbers from 1 to 30. Module 1 would translate to DID 1 - 8, Module 2 would translate to DID 9 - 16, module 3 = DID 17 - 24, etc.

The protocol we are using is the Direct addressing method where UPB commands are sent in the following manner:

NOTE: values shown below are decimal not hex

on cmd

Control Word	NID	DID	SID	MDID	ARG	ARG	CHK (checksum)
09 00	03	01	XX	22	64	XX	

off cmd

Control Word	NID	DID	SID	MDID	ARG	ARG	CHK
09 00	03	01	XX	22	00	XX	

all off cmd

Control Word	NID	DID	SID	MDID	ARG	ARG	CHK
09 00	03	00	XX	22	00	XX	

status request

Control Word	NID	DID	SID	MDID	CHK
07 00	03	01	XX	30	

response (ON)

	Control Word	NID	DID	SID	MDID	ARG	CHK
PU	08 00	03	01	XX	86	64	

response (OFF)

	Control Word	NID	DID	SID	MDID	ARG	CHK
PU	08 00	03	01	XX	86	00	

The variables NID and DID are stored in NVRAM on each Rain8upb and are set by a downloaded WGL config program.

Commands may be sent in the 9-byte mode shown or 8-byte mode with the second ARG deleted.

Input Feature

To utilize the input feature your Rain8upb must be configured with the Rain8UPB Config V3.1 software:

1. The "input enable" box must be checked.
2. The DID set to any address desired that is not in use.
3. The "rain switch" check box is cleared for flow meter applications.
4. Click "load Module".

When the **flow meter is active** a 16bit register is incremented each time a contact closure is detected between the Rain8UPB's input and common terminals. The contents of this register can be read by sending a status request as shown above to the DID selected (09 in the example below) in the above configuration. The registers are non-volatile ram but have no provision for resetting so the count will roll over at the FFFFhex (65536 dec) count.

input status request

Control Word	NID	DID	SID	MDID	CHK
07 00	03	09	XX	30	

response (16 bit register contents)

	Control Word	NID	DID	SID	MDID	ARG	CHK
PU	08 00	03	09	msb	86	lsb	

Lsb = bits 0-7 Msb = bits 8 - 15

When the **rain switch is active** the procedure is the same except instead of a 16 bit return, only two states are displayed.

ARG = 00 means rain switch is closed (wet)

ARG = 64 means rain switch is open (dry)

Note that if the "input enable" box is not checked and loaded there will be no response to an input status request.