EZFlora INSTEON and X10 Messages/Commands

In the tables that follow, the column heading **SE DAB** denotes whether the command is Standard-length (**S**) or Extended-length (**E**), and whether it is a Direct (**D**), ALL-Link (**A**), or Broadcast (**B**) command.

INSTEON Standard-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2		Description
Assign to ALL-Link Group	SD	0x01	0x00 - 0xFF Group Number		Used during INSTEON device linking session. Assigns link to an ALL-Link group.
Delete from ALL-Link Group	SD	0x02	0x00 - 0xFF Group Number		Used during unlinking session. Deletes a link from the ALL-Link database.
Product Key Request	SD	0x03	0x00		EZFlora responds with an Extended-length *Product Key Response* message.
Enter Link Mode	SD	0x09	0x00 - 0xFF Group Number		Same as holding down *SET Button* for 4 seconds.
Enter Unlink Mode	SD	0x0A	0x00 - 0xFF Group Number		Same as holding down the *SET* button for 10 seconds.
Ping	SD	0x0F	0x00		EZFlora returns an ACK message.
ID Request	SD	0x10	0x00		EZFlora first returns an ACK message, then a *SET Button Pressed Responder* broadcast message.
Set MSB for Peek and Poke	SD	0x28	0x00 - 0xFF MSB of address for Peek/Poke commands		Sets the address most significant for the location to be read or written into. Use 0x00 for locations inside the EZFlora, and 0xFF for the database.
Poke (see note 2)	SD	0x29	0x00 - 0xFF value of timer in minutes		Puts the byte in Cmd 2 into the timer location pointed to by TIMERPTR which is then incremented.
Peek (see note 1)	SD	0x2B	0x00 - 0x27 TIMERPTR value		Sets Cmd 2 value into TIMERPTR. Cmd 2 of the ACK message returns the byte pointed to TIMERPTR.
Sprinkler Valve ON	SD	0x40	0x00 - 0x07 Valve Number		Turn ON the valve (1-8) in Cmd 2 (0-7). Cmd2 of the ACK message has the Valve Status Byte, or 0x00 if an invalid valve number or if Inhibit is ON.
Sprinkler Valve OFF	SD	0x41	0x00 - 0x07 Valve Number		Turn OFF the valve (1-8) in Cmd 2 (0-7). ACK a 0xff if an invalid valve number.
Sprinkler Program ON	SD	0x42	0x00 - 0x03 Program Number		Turn ON the program (1-4) in Cmd 2 (0-3). Cmd2 of the ACK message has the Valve Status Byte, or 0x00 if an invalid program number or if Inhibit is ON.
Sprinkler Program OFF	SD	0x43	0x00 - 0x03 Program Number		Turn OFF the program (1-8) in Cmd 2 (0-3). ACK a 0xff in Cmd 2 if an invalid program number.
Sprinkler Control (All commands return the valve status register in Cmd2 of the ACK message)	SD	0x44	0x00	Reset	Resets EZFlora to its factory default settings
			0x02	Get Valve Status	Returns the valve status register.
			0x03	Inhibit Command Acceptance	Stop accepting valve/program ON commands.
			0x04	Resume Command Acceptance	Resume accepting commands.
			0x05	Skip Forward	Turn off active valve and continue with next valve in program.
			0x06	Skip Back	Turn off active valve and continue with previous valve in program.
			0x07	Enable Pump	Configures V8 output for pump control.
			0x08	Disable Pump	Configures V8 output for normal Valve 8 control.
			0x09	Enable Valve Status Change Message	Enables broadcast message each time the valves change status.
			0x0a	Disable Valve Status Change Message	Disables broadcast message each time the valves change status.
			0x0b	Arm rain sensor input	Enables rain sensor to inhibit.
			0x0c	Disarm rain sensor	Disables rain sensor to inhibit.
			0x0d	Enable Meter Count Change Message	Enables broadcast message each time the meter count changes.
			0x0e	Disable Meter Count Change Message	Disables broadcast message each time the meter count changes.
			0x0f	Reset meter count	Sets the meter counter to zero.
			0xfe	Start diagnostics	Pulses the valves sequentially one second at a time.
			0xff	Stop diagnostics	Stops the diagnostics sequence.

INSTEON Standard-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
Get Sprinkler Timers Request	SD	0x45	0x00 - 0x04 Timer Bank Number (0x00: is the Manual/Default Valve timers)	EZFlora responds with an Extended-length *Get Sprinkler Program Response* message.
Get Configuration Register	SD	0xf0	0x00	Returns the configuration register in the Cmd2 byte of the ACK message.
Set Configuration Register	SD	0xf1	0x00 - 0xFF Configuration bit map	Sets the configuration register.
Get LS Meter Count	SD	0xf2	0x00	Returns the least significant byte of the meter counter in the Cmd2 of the ACK message.
Get MS Meter Count	SD	0xf3	0x00	Returns the most significant byte of the meter counter in the Cmd2 of the ACK message.
Set LS Meter Count	SD	0xf4	0x00	Sets the least significant byte of the meter counter to the value in Cmd2.
Set MS Meter Count	SD	0xf5	0x00	Sets the most significant byte of the meter counter to the value in Cmd2.

INSTEON Extended-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
Set Sprinkler Timers	ED	0x40	0x00 - 0x04 Timer Bank Number (0x00: is the Manual/Default Valve timers)	D1 to D8 contain valve timer bank data to be set. D9-D14 are don't care. Cmd 2 contains the timer bank number: 0 for manual/default, 1-4 for P1 through P4.
Get Sprinkler Timers Response	ED	0x41	0x00 - 0x04 Program Number (0x00: is the Manual/Default Valve timers)	D1 to D8 contain current valve timer bank data. D9-D14 are don't care. Cmd 2 contains the timer bank number: 0 for manual/default, 1-4 for P1 through P4.

INSTEON Standard-Length ALL-Link Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
ALL-Link Activate	SA	0x11	0x00 - 0x0F Group number	Recall and activate ALL-Link state for number in Cmd 2

INSTEON Standard-Length Broadcast Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
SET Button Pressed Slave	SB	0x01	None	Linking Mode as a Slave device
Status Changed	SB	0x27	EZFlora Valve/Counter Status	EZFlora send this message when there is change in the valve status (OFF-> ON -> OFF during a program) or the meter counter.

Notes:

1) **Valve Status Byte:** EZFlora returns the status byte in response to a Valve or Program direct command request, or as a broadcast whenever any valve status changes during programs. In the case of an invalid Valve or Program condition, the returned value is 0x00 (for ON) and 0xff (for OFF commands.) The information in this byte is encoded as shown on the right.

Bits 0:2	The Active Valve # (0-7 is V1-V8)
Bits 3:4	Active program number (0-3)
Bit 5	If set, a Program Sequence is running
Bit 6	If set, output V8 is configured for pump control
Bit 7	If set, a valve (V1-V8) is running (ON)

2) **Configuration Register**: The configuration register contains global configuration flags and also reflects the state of the rain sensor input. The various bits of this register are shown on the right .

Bit 0	If set, EZFlora is in diagnostics mode
Bit 1	If set, the rain sensor input is ON
Bit 3	If set, the EZFlora will not turn on valves
Bit 4	If set, the rain sensor input is enabled
Bit 5	If set, the meter broadcast message is enabled
Bit 6	If set, the valve broadcast message is enabled
Bit 7	If set, output V8 is configured for pump control

3) **Timer Locations:** The range of EEPROM memory locations accessible for Peek and Poke commands correspond to the timer values as shown on the right. Please note that only the LSB specified in the Peek command is used and that the range is limited to addresses 0x00 to 0x2f. These locations are also accessible, one whole timer bank at a time, through the extended commands *Set Sprinkler Timers* and *Get Sprinkler Timers*.

Timer Bank	EEPROM Address
Default/Manual Valve timers:	0x00 – 0x07
Program Sequence 1 (P1):	0x08 – 0x0f
Program Sequence 2 (P2):	0x10 – 0x17
Program Sequence 3 (P3):	0x18 – 0x1f
Program Sequence 4 (P4):	0x20 – 0x27

EZFlora INSTEON and X10 Messages/Commands

INSTEON Standard-Length Broadcast Messages/Commands

SET Button Pressed Slave	SB	0x01	None	Linking Mode as a Slave device
	SB	0x27	EZFlora Valve Status	EZFlora send this message when there is change in valve status (OFF-> ON -> OFF) when executing a program. This message is not sent follwing a direct valve control command.

Notes:

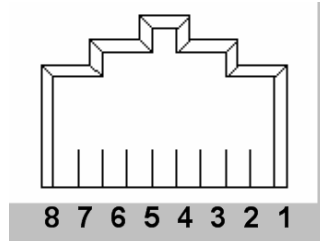|		
The "To Address" Field of the **"Status Change"** broadcast message contains information as shown on the right.	To Address USB	Status Register see previous page for bit definitions.
	To Address MSB	Most significant byte of the meter counter
	To Address LSB	Least significant byte of the meter counter

EZFlora X-10 Commands

Command Name	UNIT	CMD	Description
Turn Valve ON	1-8	ON	Turn Valve in UNIT (1-8) ON
Turn Valve OFF	1-8	OFF	Turn Valve in UNIT (1-8) OFF
Turn Program ON	9-12	ON	Start Program (1-4)
Turn Program OFF	9-12	OFF	Stop Program (1-4)
Inhibit	13	ON	Stop accepting commands
Resume	13	OFF	Resume command acceptance
SKIP Forward	14	ON	Turn OFF Active Valve and Continue with Next Valve in Program (Skip Forward)
SKIP Back	14	OFF	Turn OFF Active Valve and Continue with Previous Valve in Program (Skip Back)
Enable Pump	16	ON	Make V8 output ON when a valve is turned ON
Disable Pump	16	OFF	Return V8 output to normal operation

X10 Enabling/Disabling:

- Select the desired House code (A-P) on an X10 controller
- Press and hold the Set Button on the side of EZFlora. The LED will start blinking once the button is released
- **If enabling** X10 control, send 3 ON commands (any Unit code) in succession until the LED stops blinking.
- If disabling, send 3 OFF commands (any Unit code) in succession until the LED stops blinking.

Accessory Connector Pin-out:

1. Input 1 (not used)
2. +5V auxiliary 50Ma. Max.
3. Ground
4. Water Meter Pulse Input (has internal pullup)
5. Ground
6. Rain Sensor (Must be pulled up to inhibit)
7. Ground
8. No Connection

8 7 6 5 4 3 2 1

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