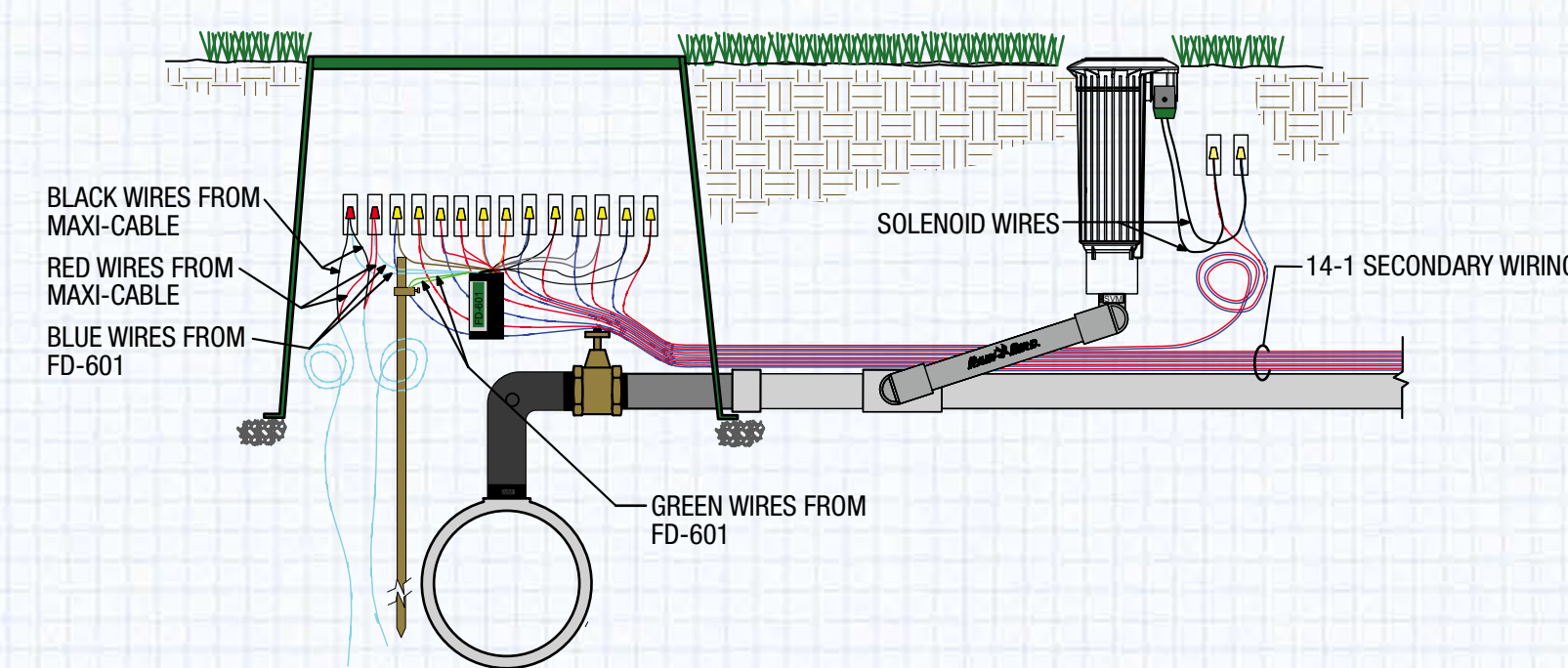
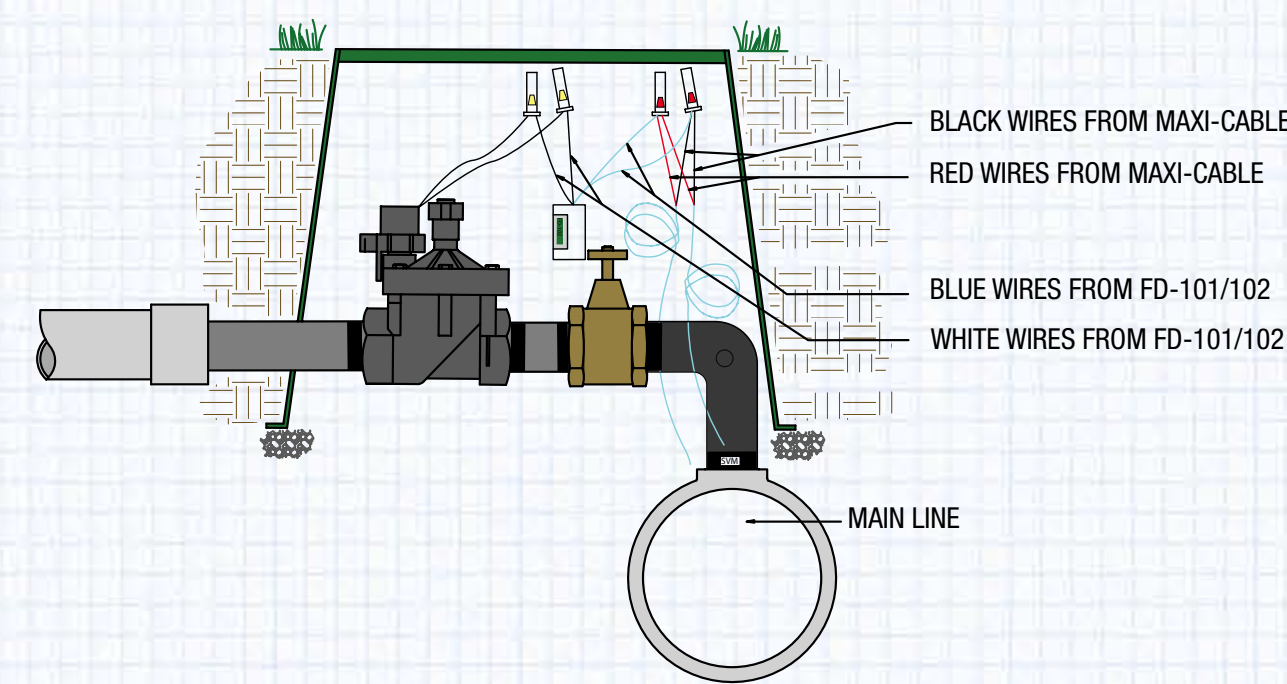
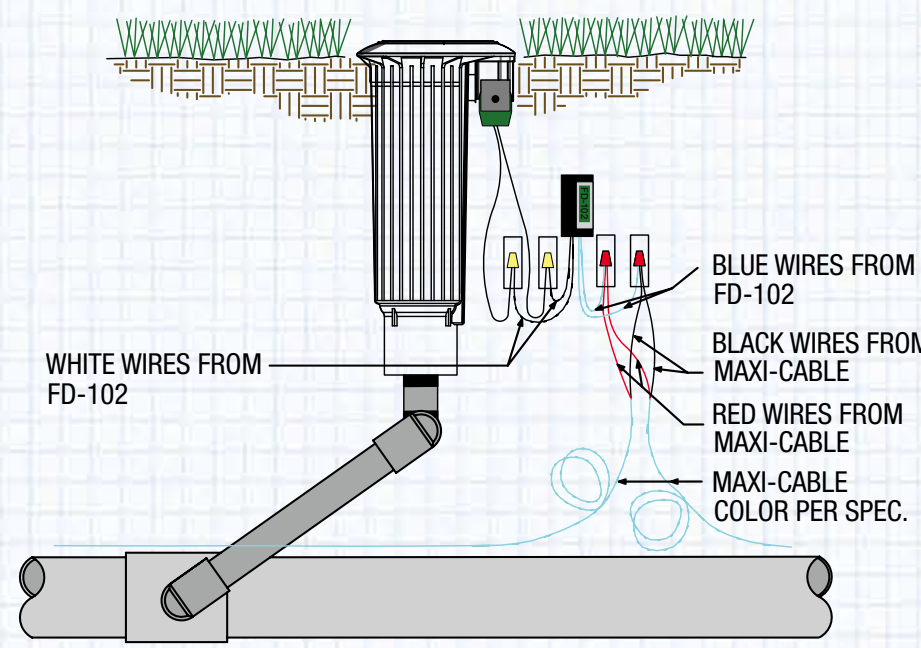


Rain Bird® Decoder Systems



VALVE-IN-HEAD ROTOR (Fairway/Rough)
FD-101/102 DECODER WITH VALVE-IN-HEAD ROTOR

BLOCK SYSTEM (Fairway/Rough)
FD-101/102 DECODER WITH ELECTRIC VALVE

MULTI-VALVE CONTROL (Tee/Green/Fairway)
FD-401/601 DECODER IN VALVE BOX WITH VALVE-IN-HEAD ROTOR



Standard Rain Bird Central Control Grounding System (Ground grid resistance of 5 Ohms or less is recommended)



Benefits	
• Easy, cost-effective installation with up to 80% less wire.	
• Simple to troubleshoot with built-in diagnostics at the central control.	
• Easy expandability, aesthetically pleasing and reduced opportunity for vandalism.	

Maximum Critical Path Lengths for Two-Wire Paths					
Nominal Wire Size	Ohms/1000'	Maximum Length for Critical Path			
		Loop		Star	
		Km	Miles	Km	Miles
2.5 mm ²	15.00 Ohms/Km	12.0	7.5	3.0	1.8
14 AWG	2.58 Ohms/1000'	15.2	9.6	3.8	2.4
12 AWG	1.62 Ohms/1000'	24.4	15.2	6.1	3.8
10 AWG	1.02 Ohms/1000'	39.2	24.4	9.8	6.1

Characteristic Table for Various Decoder Models				
Decoder Model	Number of Decoder Addresses	Maximum Number of Solenoids Per Address	Maximum Addresses Operating at Once	Current Draw (mA) at Rest Per Decoder
FD-101	1	1	1	0.5 mA
FD-102	1	2	1	0.5 mA
FD-202	2	2	2	1.0 mA
FD-401*	4	1	4	1.0 mA
FD-601*	6	1	4	1.0 mA

Design Criteria for Decoder Systems				
Condition	CIRRUS	NIMBUS II	STRATUS II	STRATUS LT
Maximum resistance in critical path	33 Ohms	33 Ohms	33 Ohms	33 Ohms
Maximum number of addresses per wire path ¹	250	250	250	200
Maximum number of addresses per MDI/LDI	500	500	500	300
Maximum number of addresses per SDI	200	200	200	200
Maximum number of active solenoids per wire path	20	20	20	15
Interface unit	LDI/MDI	LDI/MDI	LDI/MDI	SDI
Maximum number of active solenoids per interface ²	40	40	30	15
Current draw at rest (mA)				
FD-101	0.5 mA	0.5 mA	0.5 mA	0.5 mA
FD-102	0.5 mA	0.5 mA	0.5 mA	0.5 mA
FD-202	1.0 mA	1.0 mA	1.0 mA	1.0 mA
FD-401	1.0 mA	1.0 mA	1.0 mA	1.0 mA
FD-601	1.0 mA	1.0 mA	1.0 mA	1.0 mA
Active solenoid current draw (mA)				
Golf (green coil)	20 mA	20 mA	20 mA	20 mA
"B" (white wires)	25 mA	25 mA	25 mA	25 mA
"DV" (black wires)	15 mA	15 mA	15 mA	15 mA
Hybrid system max number of interfaces per system (LDI, MDI, SDI)	8	3	2	1

Basic Data for Decoder System Design	
The basic data for a decoder system is as follows:	
500 maximum*	Decoder (addresses) per MDI/LDI interface unit
200 maximum	Decoder (addresses) per SDI interface unit
250 maximum	Decoder (addresses) per two-wire path
40 maximum	Active solenoids per LDI or MDI (with 20 mA current draw each)
15 maximum	Active solenoids per SDI (with 20 mA current draw each)
20 maximum	Active solenoids per two-wire path on LDI or MDI (with 20 mA current draw each)
15 maximum	Active solenoids per two-wire path on SDI (with 20 mA draw current each)
9 Volts	Maximum allowable voltage drop per two-wire path
15 mA (total)*	For LDI or SDI Lights
0.5 mA each	For each inactive FD-101 or FD-102 decoder
1.0 mA each	For each inactive FD-401, FD-202 or FD-601 decoder
15 mA each	For each active DV solenoid coil with black wires
20 mA each	For each active Golf (green) solenoid coil
25 mA each	For each active B solenoid coil with white wires
LSP-1 Installation	No more than 8 decoders between two LSP-1 surge arrestors or no more than 500ft., whichever is less. LSP-1 ground grid resistance of 50 Ohms or less is recommended.

Maximum Wire Lengths for Secondary Path Wire Runs		
Wire Size	Secondary Wire Run Lengths	
	Meters	Feet
1.5 mm ²	100	328
2.0 mm ²	133	436
2.5 mm ²	166	545
16.0 AWG	88	289
14.0 AWG	139	456
12.0 AWG	220	720

