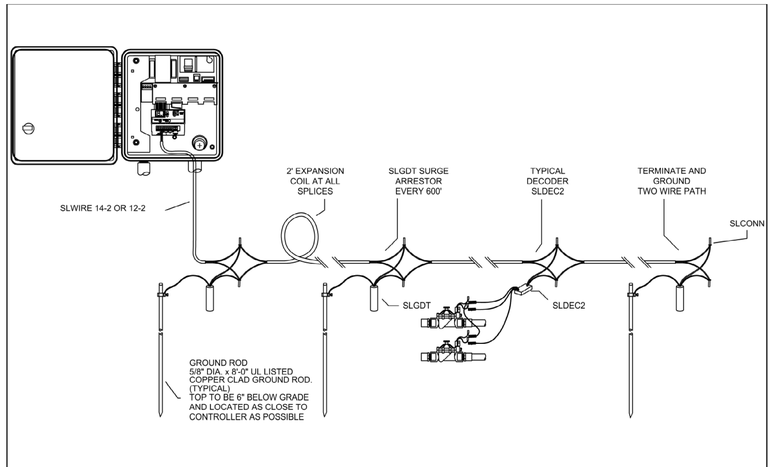
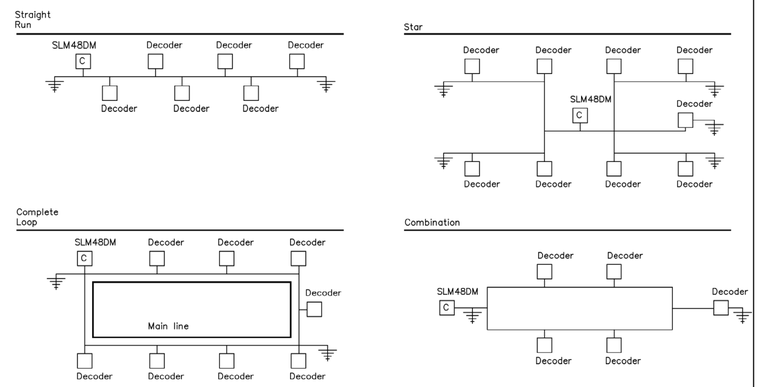
Two-wire irrigation details:



J1	SYSTEM REQUIREMENTS
NTS	SN:



J7	SMARTWIRE WIRE PATH LAYOUT
NTS	SN:

Straight line configuration, i.e. wire distance to furthest decoder, no loop:

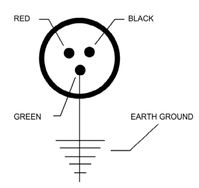
Wire Size (Guage)	#18	#16	#14	#12
Wire Length (ft)	1,000	2,000	4,000	6,000
Wire Length (m)	300	600	1,200	1,800

Loop Configuration, i.e. wire distance to the furthest decoder in the loop:

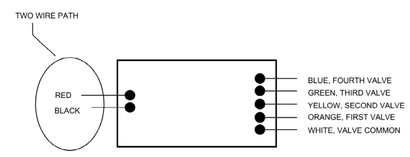
Wire Size (Guage)	#18	#16	#14	#12
Wire Length (ft)	2,000	4,000	10,000	10,000
Wire Length (m)	600	1,200	3,000	3,000

Maximum total wire path length is 10,000 ft. (3,000 m).

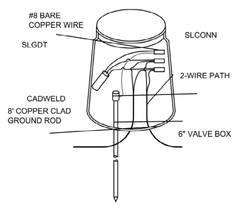
E1	WIRE SIZING
NTS	SN:



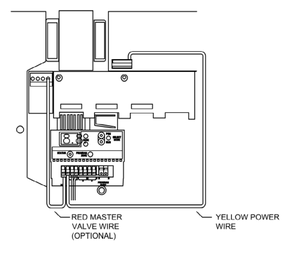
E5	SLGDT SCHEMATIC
NTS	SN:



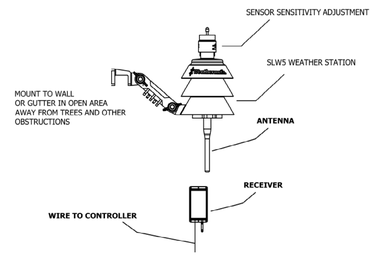
E9	DECODER SCHEMATIC
NTS	SN:



A1	GROUNDING DETAIL
NTS	SN:



A5	POWER AND MASTER VALVE DETAIL
NTS	SN:



A9	SLW5 WEATHER STATION
NTS	SN:

Two-wire notes:

NOTES:

1. Specific wire polarity is required. Maintain red and black wire polarity throughout installation.
2. Maintain independent wire path for each controller. No splicing or joining wire paths for multiple controls.
3. Up to three independent wire paths may be run for each SLM48DM.
4. Maximum distance from SLDEC decoders to remote control valve not to exceed 100' (30,5m).
5. Each 2-wire run may be laid out in straight run, complete loop, star, or combination layouts as shown in details. Always terminate and ground each leg of the wire path using manufacturer's recommended grounding methods.
6. Use a continuous loop wire path whenever possible to provide the best communication and power path for the system. Looping provides a redundant path for the power and signal allowing the system to continue operation in the event the wire path is cut.
7. Mark each zone number on the SLDEC decoder. For multi-valve decoders record the zone in order of wire color code: orange, yellow, green, and blue.
8. Mark all zone numbers and decoder locations on the as-built plan for final submittal.
9. Secure all Red and Black 2-wire connections using only manufacturer's supplied SLCONN aluminum connectors and grease filled waterproof connectors.
10. All remote control valve wire splices shall be secured using an encapsulated, gel-filled waterproof wire connector suitable for direct burial and installed according to manufacturer's specifications.
11. Use SmartWire SLWIRE cable supplied by Weathermatic sprinkler division of Telsco Industries to comply with the following specifications:

    a. Conductors must be soft drawn, annealed, solid copper conforming to ASTM 33.

    b. Conductor insulation must be 4/64-inch thick polyvinyl chloride (PVC) conforming to UL #493.

    c. The two insulated conductors laid in parallel and encased in a single outer jacket of 3/64-inch thick, high-density, sunlight resistant polyethylene conforming to ICEA S-61-402 and NEMA WC5, having a minimum wall thickness of .045-inch.

    d. The two conductors must be color-coded: normally one conductor red and the other black. Both conductors shall be the same size.

    e. The following brands meet the above specifications for direct burial cable: Weathermatic SLWIRE12; Weathermatic SLWIRE14.
12. Wire sizing and maximum distance shall not exceed manufacturer's recommendations to avoid voltage loss and insure proper operation of the system.
13. All 2-wire paths under hardscape surfaces shall be sleeved and include no splices of the 2-wire path within 5' of sleeves. Secure a 2' (0,6m) expansion loop in the two-wire path at each change of direction and entry and exit of sleeve locations during wire installation. Release the expansion loops prior to direct burial.
14. Install one SLGDT surge arrestor at the following locations along the 2-wire path: within 25' (7.5m) of each controller, the farthest distance on the 2-wire path from the controller, every 300' along the wire path, at any independent branch termination greater than 50' (15m) from than main 2-wire path.
15. Connect each SLGDT to an 8' copper clad UL approved grounding round or other approved grounding method to obtain 12 ohms or less resistance. Use CADWELD TM permanent welded, low-resistance connection to assure best grounding performance. Consult ASIC specification 100-2002 for additional grounding specifications for appropriate for local soil conditions.
16. Use care in stripping all wire connections to avoid damage to the 2-wire shield and red and black wire path. Remove and discard any damaged 2-wire sections and repair using two SLCONN splice kits.
17. Use expansion coils on the red and black wires at each decoder installation. No expansion coils are necessary for the SLGDT.
18. Adhere to all local and national building and electrical codes.

Scale: Not to Scale

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4-6-2018

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DRAWN BY: MCM
REVIEWED BY: MCM

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 03/01/18

SHEET TITLE:
2-WIRE DETAILS

SHEET NUMBER:
L515