WARMLYYOURS
RADIANT HEATING

Twin Conductor ShortStop Instructions

The ShortStop works for finding faults in medium and long rolls of WarmlyYours floor heating systems. It does not work on the shortest rolls. The ShortStop will not help if you do not follow the Design Layout and if you do not have a copy of the installation plan. Contact WarmlyYours to request a copy of the Design Layout if needed.

1. Finding what ROLL is in the floor

a. Columns 2 & 3 of Tables 1,2 & 3 lists all the rolls that we sell and have sold. To find which roll is in your floor, do one of the following things:
   i. Look to the original quote,
   ii. On the layout page; or
   iii. On the UL tags that come with each roll

2. Setting Velocity of Propagation (VOP)

a. The correct VOP will improve the accuracy of the ShortStop.
b. To set the VOP, turn the ShortStop off.
c. Do not connect the alligator clips yet.
d. With the ShortStop turned off, press and hold the down arrow and at the same time the on/off button until a zero then alternately or two digit number appears on the screen. This two-digit number is the VOP.
e. Press the up or down arrow to set the ShortStop to the correct VOP value.
f. Switch the ShortStop off.

3. Finding the Cable distance to the Short/Break

a. Before connecting the ROLL to the ShortStop ensure that the ground is NOT TOUCHING the inner wire.
b. Twist the Red/Yellow wire and the black wire together
c. Connect the red alligator clip to the Red/Yellow wire and connect the black alligator clips to the ground sheath. Turn on shortstop. You will get a reading in feet. Note this down. 3a _____ Turn off shortstop.
d. The figures from (3a) are the length of CABLE to the short/break from the end. These figures will INCLUDE the cold leads connecting the thermostat to the mat. The cold length can be estimated by using the design layout.
e. To find the length of HEATING CABLE from the end, subtract the cold lead length from the figure noted down in (3a).

3a _____ - Yellow/Red Cold Lead _____ = _____

4. Finding the Short in the floor

a. The distances displayed is the linear feet of CABLE to the short from the end.
b. To find the fault in the floor we must work out the Length of ROLL to the short.
c. There are two ways to do this:

5. Calculating the distance down the roll to the Short/Break

Rolls from Table 1 & 2
   a. There is 6' of cable for every foot of ROLL.
   b. Take the measurement and divide it by 6.
   c. This figure is the length of ROLL from the beginning point to the short.

Rolls from Table 3
   a. There is 12' of CABLE for every foot of ROLL
   b. Take the measurement and divided it by 12.
   c. This figure is the length of ROLL from the beginning point.

10114-I

Table 1 - 120 volt

1	2	3	4	5	6	7	8	9	10	11
Mat Area	Mat size Width x length		Wattage	Cable length		Resistance	Current	VOP	SS Cable length	
Sq.ft	Feet		Watts	Meters	Feet	Ohms	Amps		Meters	Feet
6.0	1.5	4.0	90.0	7.01	22.98	160.00	0.75	--	--	
9.0	1.5	6.0	135.0	10.74	35.24	106.67	1.13	--	--	
13.5	1.5	9.0	203.0	15.88	52.09	71.10	1.70	63	21	69
18.0	1.5	12.0	270.0	21.49	70.47	53.33	2.25	60	26	85
22.5	1.5	15.0	337.5	26.62	87.32	42.67	2.81	62	31	102
27.0	1.5	18.0	405.0	31.76	104.18	35.56	3.38	63	37	121
31.5	1.5	21.0	472.5	37.37	122.56	30.48	3.94	63	41	134
36.0	1.5	24.0	540.0	42.50	139.41	26.67	4.50	63	47	154
40.5	1.5	27.0	607.5	48.11	157.80	23.70	5.06	64	53	174
45.0	1.5	30.0	675.0	53.25	174.65	21.33	5.63	63	58	190
49.5	1.5	33.0	742.5	58.85	193.03	19.39	6.19	62	63	207
57.0	1.5	38.0	855.0	67.73	222.14	16.84	7.13	64	72	236
64.5	1.5	43.0	967.5	76.60	251.25	14.88	8.06	62	82	269
72.0	1.5	48.0	1080.0	85.47	280.36	13.33	9.00	61	90	295
78.0	1.5	52.0	1170.0	92.48	303.34	12.31	9.75	61	97	318
84.0	1.5	56.0	1260.0	99.49	326.32	11.40	10.50	63	110	360
90.0	1.5	60.0	1350.0	106.50	349.00	10.70	11.25	61	116	381
99.0	1.5	66.0	1485.0	117.20	384.53	9.70	12.38	63	128	420
105.0	1.5	70.0	1575.0	124.24	407.51	9.10	13.10	61	137	449

Cold Lead Length : 15 feet, 17AWG Wire colors: Yellow, Black, and ground sheath. 52' + rolls, coldlead is 14AWG.

Table 2 - 240 volt

1	2	3	4	5	6	7	8	9	10	11
Mat Area	Mat size Width x length		Wattage	Cable length		Resistance	Current	VOP	SS Cable length	
Sq.ft	Feet		Watts	Meters	Feet	Ohms	Amps		Meters	Feet
12.0	1.5	8.0	180.0	14.01	45.96	320.00	0.75	--	--	
21.0	1.5	14.0	315.0	24.75	81.20	182.86	1.31	--	--	
25.5	1.5	17.0	382.5	30.36	99.58	150.59	1.59	63	35	115
33.0	1.5	22.0	495.0	39.23	128.69	116.36	2.06	64	45	148
43.5	1.5	29.0	652.5	51.38	168.52	88.28	2.72	63	56	184
54.0	1.5	36.0	810.0	63.99	209.88	71.11	3.38	65	69	226
63.0	1.5	42.0	945.0	74.73	245.12	60.95	3.94	63	78	256
69.0	1.5	46.0	1035.0	81.74	268.10	55.65	4.31	63	87	285
73.5	1.5	49.0	1103.0	86.88	285.00	52.20	4.60	65	92	302
81.0	1.5	54.0	1215.0	96.22	315.59	47.41	5.06	63	101	331
85.5	1.5	57.0	1283.0	101.35	332.50	44.90	5.40	61	106	348
99.0	1.5	66.0	1485.0	117.24	384.53	38.79	6.19	62	122	400
114.0	1.5	76.0	1710.0	134.98	442.75	33.68	7.13	62	141	462

Cold Lead Length : 15 feet, 17AWG. Cold lead wire color: Red, Black, and ground sheath. 52'+ rolls coldlead is 14AWG

Table 3 - 240 volt

1	2	3	4	5	6	7	8	9	10	11
Mat Area	Mat size Width x length		Wattage	Cable length		Resistance	Current	VOP	SS Cable length	
Sq.ft	Feet		Watts	Meters	Feet	Ohms	Amps		Meters	Feet
129.0	3.0	43.0	1935.0	151.60	497.25	29.77	8.06	64	156	512
144.0	3.0	48.0	2160.0	169.16	554.86	26.67	9.00	63	175	574
156.0	3.0	52.0	2340.0	183.03	600.34	24.62	9.75	63	179	587
180.0	3.0	60.0	2700.0	210.76	691.30	21.30	11.25	62	214	702
210.0	3.0	70.0	3150.0	245.89	806.51	18.29	13.13	63	251	824

Cold Lead Length : 15 feet, 17AWG. Cold lead wire color: Red, Black, and ground sheath. 52'+ rolls coldlead is 14AWG

10114-H