

Digitrax Detection & Signaling Specification Sheet

BDL168 LocoNet Occupancy Detector, 16 Detection Sections



Amperage	3 Amp Capacity per Detection Section
Layout Interface	44 pin Edge Connector
External Power	Yes, (PS14)
Ability to work on non Digitrax Layouts	Yes
Transponding Interface	10 pin Connector
Transponding Zones	Up to 8 (4 per RX4)
Multiple RX4 Interfaces	Yes, 2
Occupancy Detection Zones	16
Detects Powered Locomotives	Yes
Detects Un-Powered Rolling Stock	Yes, (With Installed Resistor Wheel sets)
Support of SuperSonic Decoder Operations	Yes
Outputs for LED's to Indicate Detection	Yes

Prod Date	06/15/2004	Discontinued	Current	Replaced By	Current
MSRP	US\$149.99			SKU	

Top Pin	Bottom Pin	Name	Connect To
1	A	Zone A	Connection to booster for Zone A
2	B	DS 1	Isolated track section for Detection Section 1
3	C	DS 2	Isolated track section for Detection Section 2
4	D	DS 3	Isolated track section for Detection Section 3
5	E	DS 4	Isolated track section for Detection Section 4
6	F	Zone B	Connection to booster for Zone B
7	H	DS 5	Isolated track section for Detection Section 5
8	J	DS 6	Isolated track section for Detection Section 6
9	K	DS 7	Isolated track section for Detection Section 7
10	L	DS 8	Isolated track section for Detection Section 8
11		Ground**	LocoNet/BDL168 ground to Booster case/common ground
	M		Nothing attached to this pin
12		AC Power 1*	Power input to BDL168 : AC 12V to 15V, or +DC 12V to 15V
	N	AC Power 2*	Power input to BDL168 : AC 12V to 15V, or +DC 12V to 15V
13	P	Zone C	Connection to booster for Zone C
14	R	DS 9	Isolated track section for Detection Section 9
15	S	DS 10	Isolated track section for Detection Section 10
16	T	DS 11	Isolated track section for Detection Section 11
17	U	DS 12	Isolated track section for Detection Section 12
18	V	Zone D	Connection to booster for Zone D
19	W	DS 13	Isolated track section for Detection Section 13
20	X	DS 14	Isolated track section for Detection Section 14
21	Y	DS 15	Isolated track section for Detection Section 15
22	Z	DS 16	Isolated track section for Detection Section 16

Option Switches for BDL168 and RX4.

OpSw	t = thrown	c = closed
01	Set up for operation with direct home wired layouts (Diatrax recommended wiring)	Set up for whole layout common rail wired layouts
03	Normal BDL LocoNet, Railsync cable polarity. (Affects detection and changes timing edge to be used for transponder detection)	Reversed BDL LocoNet, Railsync cable polarity. (Affects detection and changes timing edge to be used for transponder detection)
05*	Disable Transponding	Enable Transponding
06*	RX4 connected (OPSW6 and 7 MUST be "t" when RX4 connected)	Do not use
07*	RX4 connected (OPSW6 and 7 MUST be "t" when RX4 connected)	Do not use
09	Detection sections show occupied when zone power is off	No forced occupied detection when zone power is off
10	Use detection section 16 as a normal detection section.	Use detection section 16 as zone power ON qualifier for whole layout common rail wiring
11	Allow this BDL168 to be the master.	Do not allow this BDL168 to be master
12	Allow this BDL168 to terminate LocoNet	Do not allow this BDL168 to terminate LocoNet
13	Power up delay 5 seconds for DB150 compatibility	Power up delay 1/2 second
19	Use regular threshold sense DCC occupancy. (approx 22 Kohms minimum)	Use high threshold sense DCC occupancy (approx 10 Kohms minimum)
25	16 LEDs show occupancy	Drive 16 occupancy LEDs from SWITCH commands (not occupancy)

Option Switches for BDL168 and RX4 con't.
Shaded boxes indicate the factory default setting.

OpSw	t = thrown	c = closed
26	Occupancy LEDs decoded from track DCC switch commands	Occupancy LEDs decoded from LocoNet SWITCH commands
36	Refreshes at GPON	Ignore GPON messages and look only at interrogate commands
37	Standard Detection Section OFF timing	Slow Detection Section OFF timing (DS release)
38		Double DS release (if OpSw 37=c)
39*	Disable "Verbose" transponding mode	Enable "Verbose" transponding mode (allow same ID in multiple zones simultaneous)
40	Direct home wiring compatible	Make all option switches factory settings
42	Standard Interrogate Setting	Turn OFF from ignoring the 1 st . interrogate after power up. Send an update of all DS values each time power is applied to it, irrespective of GPON or Interrogate messages (opsw36)
43*	Standard Transponding Filter	Disable Transponding Filter
44*		Maximum Transponding Filter (if OpSw43=t)
45*	Transponding messages sent at GPOFF	No Transponding messages are sent at GPOFF

(* changes only affect transponding)

Suggested BDL168 Settings for Railroad&Co. from European users.

- OpSw9 = Closed (No message sent if un-powered)
- OpSw36 = Closed (Ignore GPON)
- OpSw37 = Closed (Long delays for sensors)
- OpSw38 = Closed (Extra long delay for sensors)
- OpSw39 = Closed (Verbose mode enabled)
- OpSw43 = Closed (Filter for transponding disabled)
- OpSw45 = Closed (Don't send transponding messages at GPOFF)

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