

HSL HSL-DI16DO16-DB 16-CH Discrete Input and 16-CH Discrete Output Daughter Board for HSL System

Pin Definitions

Pin #	Signal Name	Description
1	+VS	External power, +10V~+30V _{DC}
2	GND	External ground
3	NC	No connection
4	GND	External ground
5	RX+	RS-422 receiving line, positive
6	TX+	RS-422 transmission line, positive
7	RX-	RS-422 receiving line, negative
8	TX-	RS-422 transmission line, negative
9	DI0	Discrete Input Channel 0
10	DI1	Discrete Input Channel 1
11	DI2	Discrete Input Channel 2
12	DI3	Discrete Input Channel 3
13	DI4	Discrete Input Channel 4
14	DI5	Discrete Input Channel 5
15	DI6	Discrete Input Channel 6
16	DI7	Discrete Input Channel 7
17	DI8	Discrete Input Channel 8
18	DI9	Discrete Input Channel 9
19	DI10	Discrete Input Channel 10
20	DI11	Discrete Input Channel 11

Pin #	Signal Name	Description
1	DI12	Discrete Input Channel 12
2	DI13	Discrete Input Channel 13
3	DI14	Discrete Input Channel 14
4	DI15	Discrete Input Channel 15
5	DO0	Discrete Output Channel 0
6	DO1	Discrete Output Channel 1
7	DO2	Discrete Output Channel 2
8	DO3	Discrete Output Channel 3
9	DO4	Discrete Output Channel 4
10	DO5	Discrete Output Channel 5
11	DO6	Discrete Output Channel 6
12	DO7	Discrete Output Channel 7
13	DO8	Discrete Output Channel 8
14	DO9	Discrete Output Channel 9
15	DO10	Discrete Output Channel 10
16	DO11	Discrete Output Channel 11
17	DO12	Discrete Output Channel 12
18	DO13	Discrete Output Channel 13
19	DO14	Discrete Output Channel 14
20	DO15	Discrete Output Channel 15

Specifications

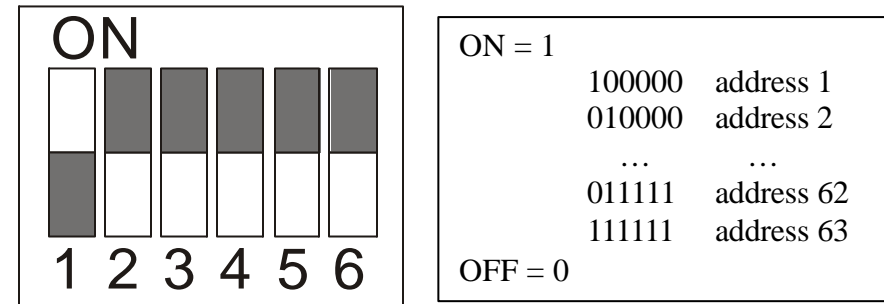
Discrete Input								
Model	Number	Type	Input Current max.	Input Impedance	Operating Voltage with 24VDC V+		Response Time	
					ON	OFF	ON	OFF
-NN	16	NPN Sinking or Dry Contact	-10mA	4.7 kΩ	9.6 V _{DC} max.	19.0 V _{DC} min.	2 ms max.	2 ms max.
-NP	16	NPN Sinking or Dry Contact	-10mA	4.7 kΩ	9.6 V _{DC} max.	19.0 V _{DC} min.	2 ms max.	2 ms max.
-PN	16	PNP Sourcing or Wet Contact	+10mA	4.7 kΩ	14.4 V _{DC} min.	5.0 max.	2 ms max.	2 ms max.
-PP	16	PNP Sourcing or Wet Contact	+10mA	4.7 kΩ	14.4 V _{DC} min.	5.0 max.	2 ms max.	2 ms max.

Transistor Output						
Model	Number	Type	Switching Capacity max.		Response Time	
			with TB32-U; TB64	with TB32	ON	OFF
-NN	16	NPN Sinking	-60mA at 24V _{DC}	-300mA at 24V _{DC}	2 ms max.	2 ms max.
-NP	16	PNP Sourcing	+60mA at 24V _{DC}	NA	2 ms max.	2 ms max.
-PN	16	NPN Sinking	-60mA at 24V _{DC}	+300mA at 24V _{DC}	2 ms max.	2 ms max.
-PP	16	PNP Sourcing	+60mA at 24V _{DC}	NA	2 ms max.	2 ms max.

Miscellaneous				
Model	Terminal Base Option	External Power Requirement	Power Consumption	Weight
-NN	HSL-TB32-DIN; HSL-TB32-U-DIN; HSL-TB64-DIN	+10V to +30V _{DC}	1.8 W	72g
-NP	HSL-TB32-U-DIN; HSL-TB64-DIN	+10V to +30V _{DC}	1.8 W	72g
-PN	HSL-TB32-DIN; HSL-TB32-U-DIN; HSL-TB64-DIN	+10V to +30V _{DC}	1.8 W	72g
-PP	HSL-TB32-U-DIN; HSL-TB64-DIN	+10V to +30V _{DC}	1.8 W	72g

LED Indication: Active DC power (Red); Link (Green); Discrete Input (Green); Discrete Output (Yellow)

DIP Switch Setting



Discrete Input Field I/O Configuration

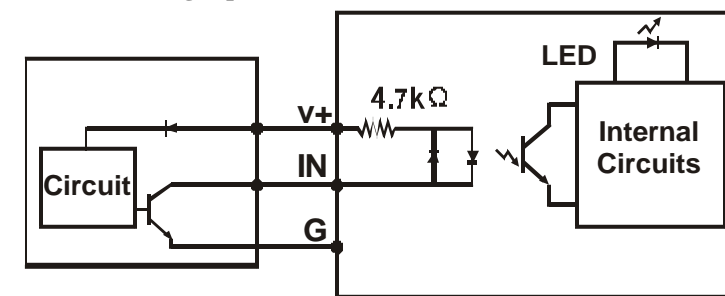
With HSL-TB32-DIN or HSL-TB32-U-DIN

Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.
0	0	4	4	8	8	12	12
1	1	5	5	9	9	13	13
2	2	6	6	10	10	14	14
3	3	7	7	11	11	15	15

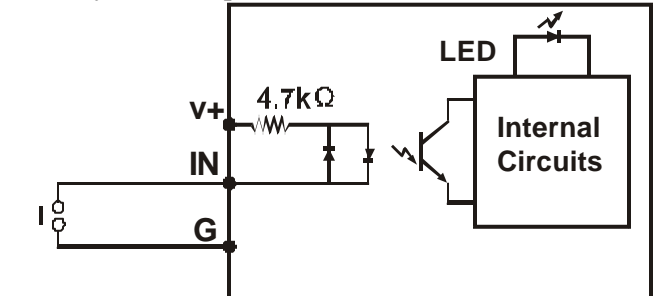
With HSL-TB64-DIN (Slot I / Slot II)

Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.
0	0 / 32	4	4 / 36	8	8 / 40	12	12 / 44
1	1 / 33	5	5 / 37	9	9 / 41	13	13 / 45
2	2 / 34	6	6 / 38	10	10 / 42	14	14 / 46
3	3 / 35	7	7 / 39	11	11 / 43	15	15 / 47

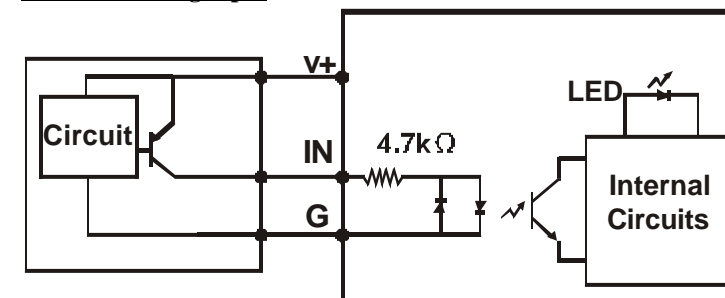
-N NPN Sinking Input



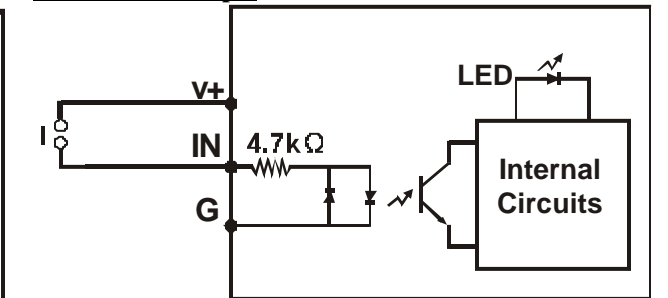
-N Dry Contact Input



-P PNP Sourcing Input



-P Wet Contact Input



Discrete Output Field I/O Configuration

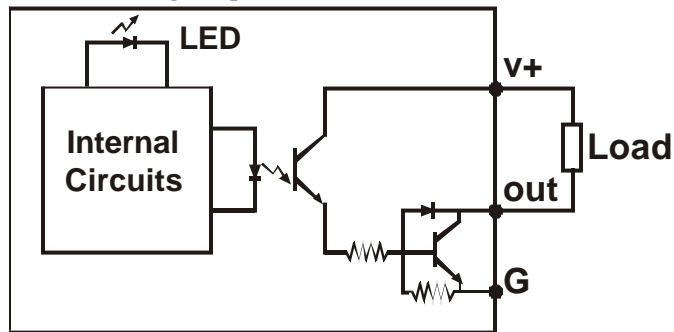
With **HSL-TB32-DIN** or **HSL-TB32-U-DIN**

Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.
0	16	4	20	8	24	12	28
1	17	5	21	9	25	13	29
2	18	6	22	10	26	14	30
3	19	7	23	11	27	15	31

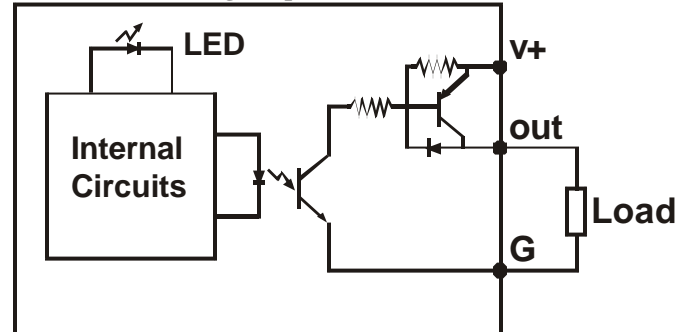
With **HSL-TB64-DIN** (Slot I / Slot II)

Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.	Channel No.	Terminal No.
0	16 / 48	4	20 / 52	8	24 / 56	12	28 / 60
1	17 / 49	5	21 / 53	9	25 / 57	13	29 / 61
2	18 / 50	6	22 / 54	10	26 / 58	14	30 / 62
3	19 / 51	7	23 / 55	11	27 / 59	15	31 / 63

-N NPN Sinking Output

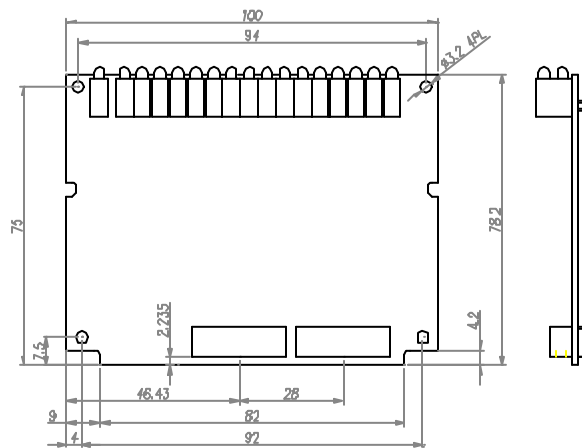


-P PNP Sourcing Output

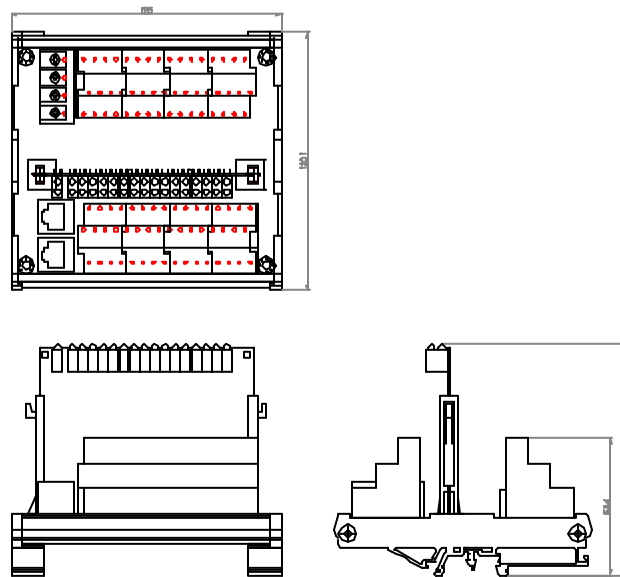


Dimension

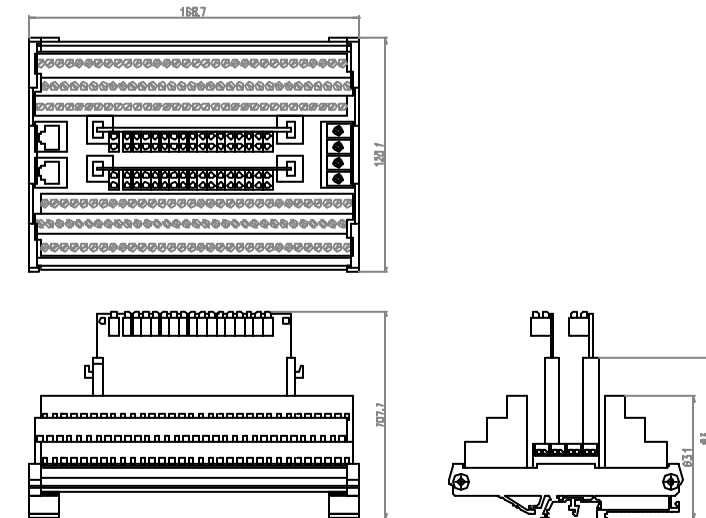
-DB Daughter Board (100x78.2) mm



-DB with HSL-TB32-DIN (126x120.1x107.3)mm



-DB with HSL-TB64-DIN (168.7x120.1x107.3)mm



Ordering Information

HSL-DI16DO16-DB-NN: 16-CH Discrete NPN Sinking Input and 16-CH Discrete NPN Sinking Output Daughter Board
 HSL-DI16DO16-DB-NP: 16-CH Discrete NPN Sinking Input and 16-CH Discrete PNP Sourcing Output Daughter Board
 HSL-DI16DO16-DB-PN: 16-CH Discrete PNP Sourcing Input and 16-CH Discrete NPN Sinking Output Daughter Board
 HSL-DI16DO16-DB-PP: 16-CH Discrete PNP Sourcing Input and 16-CH Discrete PNP Sourcing Output Daughter Board

Terminal Base

HSL-TB32-DIN: 32-CH I/O Terminal Base for HSL-DI16DO16-DB-NN (-PN) with DIN Socket
 HSL-TB32-U-DIN: 32-CH I/O Terminal Base with DIN Socket
 HSL-TB64-DIN: 64-CH I/O Terminal Base with DIN Socket

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