

**40 Channel AI
Terminal Board
T8830S
User Manual**

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

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AI Terminal Board T8830S User Manual

Section 1 Basic Description

T8830S is a 40 channel AI terminal board which is used for connecting the AI signal in the field with the AI module T8431 in the Trusted TMR system.

Section 2 Performance Index

Table 2-1 Performance Index

Parameter		Description
Model		T8830S
Type		AI terminal board
Channel Number		40 channels
Voltage Range		(18~32)V
Maximum Current (Power supply in field)		50mA/Channel
Power Consumption (Power supply in field)		0.25W (LED)
Temperature	Working temperature	(-20~55)°C
	Storage temperature	(-40~70)°C
Humidity	Working humidity	10%RH~90%RH, no condensation.
	Storage humidity	5%RH~95%RH, no condensation.
Fuse	Changeable	Fast action fuse, 50mA
Module size (Length×Width×Height)		339mm×108.2mm×64.7mm

Section 3 Instruction

3.1 Appearance of the Terminal Board

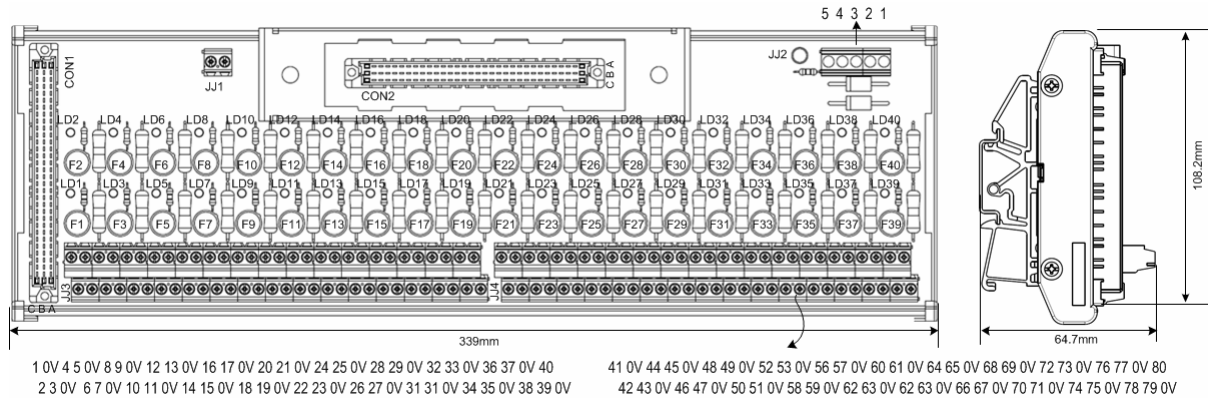


Figure 3-1 Appearance

3.2 Connector Description

Table 3-1 Connector Description

Identifier	Description
CON1, CON2	Connect the cable interface of AI module, and CON1 is SmartSlot
JJ2	Wiring terminal of distributed power supplier
LD1~LD40	Channel light indicators
F1~F40	Channel fuse (Specification: 50mA)
JJ3, JJ4	Wiring terminals connecting the signal in the field

3.3 Interface Features

The channel principle of T8830S signals is shown in the figure below. Take channel 1 and 2 as examples for instruction.

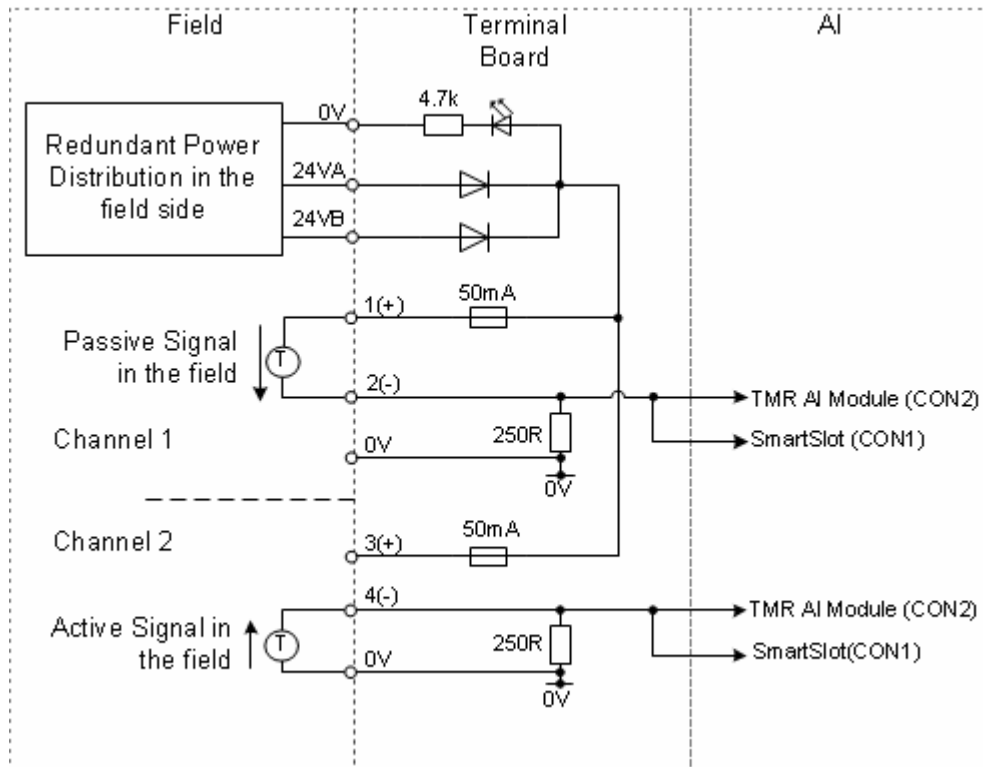


Figure 3-2 Circuit Wiring Diagram

3.4 Cable Description

Relevant cables connecting the terminal board are shown below:

PD-TC000 Trusted power supply cables

PD-TC200 Trusted I/O slot cables

PD-TC500 Trusted I/O SmartSlot cables

3.5 Signal Terminal Wiring Table

Table 3-2 Wiring Description

Channel	Terminal Identifier	Definition	Terminal Identifier	Definition	Terminal Identifier	Definition
Channel 1	1	+	2	-	0V	0V
Channel 2	3	+	4	-	0V	0V
Channel 3	5	+	6	-	0V	0V
Channel 4	7	+	8	-	0V	0V
Channel 5	9	+	10	-	0V	0V
Channel 6	11	+	12	-	0V	0V

Channel	Terminal Identifier	Definition	Terminal Identifier	Definition	Terminal Identifier	Definition
Channel 7	13	+	14	-	0V	0V
Channel 8	15	+	16	-	0V	0V
Channel 9	17	+	18	-	0V	0V
Channel 10	19	+	20	-	0V	0V
Channel 11	21	+	22	-	0V	0V
Channel 12	23	+	24	-	0V	0V
Channel 13	25	+	26	-	0V	0V
Channel 14	27	+	28	-	0V	0V
Channel 15	29	+	30	-	0V	0V
Channel 16	31	+	32	-	0V	0V
Channel 17	33	+	34	-	0V	0V
Channel 18	35	+	36	-	0V	0V
Channel 19	37	+	38	-	0V	0V
Channel 20	39	+	40	-	0V	0V
Channel 21	41	+	42	-	0V	0V
Channel 22	43	+	44	-	0V	0V
Channel 23	45	+	46	-	0V	0V
Channel 24	47	+	48	-	0V	0V
Channel 25	49	+	50	-	0V	0V
Channel 26	51	+	52	-	0V	0V
Channel 27	53	+	54	-	0V	0V
Channel 28	55	+	56	-	0V	0V
Channel 29	57	+	58	-	0V	0V
Channel 30	59	+	60	-	0V	0V
Channel 31	61	+	62	-	0V	0V
Channel 32	63	+	64	-	0V	0V
Channel 33	65	+	66	-	0V	0V
Channel 34	67	+	68	-	0V	0V
Channel 35	69	+	70	-	0V	0V
Channel 36	71	+	72	-	0V	0V
Channel 37	73	+	74	-	0V	0V
Channel 38	75	+	76	-	0V	0V
Channel 39	77	+	78	-	0V	0V
Channel 40	79	+	80	-	0V	0V

3.6 Power Supplier Terminal Wiring Table

Terminal	Definition
1	24V-A
2	24V-B
3	0V
4	0V
5	24V (The accessed auxiliary power supplier according to the requirement)

3.7 CON1 and CON2 Pin Definition

Terminal	C	B	A
1	SmartSlot Link C	SmartSlot Link B	SmartSlot Link A
2			
3	Chan 28(+)	Chan 14(+)	Chan 0(+)
4	Chan 28(+)	Chan 14(+)	Chan 0(+)
5	Chan 29(+)	Chan 15(+)	Chan 1(+)
6	Chan 29(+)	Chan 15(+)	Chan 1(+)
7	Chan 30(+)	Chan 16(+)	Chan 2(+)
8	Chan 30(+)	Chan 16(+)	Chan 2(+)
9	0V	0V	0V
10	Chan 31(+)	Chan 17(+)	Chan 3(+)
11	Chan 31(+)	Chan 17(+)	Chan 3(+)
12	Chan 32(+)	Chan 18(+)	Chan 4(+)
13	Chan 32(+)	Chan 18(+)	Chan 4(+)
14	Chan 33(+)	Chan 19(+)	Chan 5(+)
15	Chan 33(+)	Chan 19(+)	Chan 5(+)
16	Chan 34(+)	Chan 20(+)	Chan 6(+)
17	Chan 34(+)	Chan 20(+)	Chan 6(+)
18	Chan 35(+)	Chan 21(+)	Chan 7(+)
19	Chan 35(+)	Chan 21(+)	Chan 7(+)
20	0V	0V	0V
21	Chan 36(+)	Chan 22(+)	Chan 8(+)
22	Chan 36(+)	Chan 22(+)	Chan 8(+)
23	Chan 37(+)	Chan 23(+)	Chan 9(+)
24	Chan 37(+)	Chan 23(+)	Chan 9(+)
25	Chan 38(+)	Chan 24(+)	Chan 10(+)
26	Chan 38(+)	Chan 24(+)	Chan 10(+)
27	Chan 39(+)	Chan 25(+)	Chan 11(+)
28	Chan 39(+)	Chan 25(+)	Chan 11(+)
29	Chan 40(+)	Chan 26(+)	Chan 12(+)
30	Chan 40(+)	Chan 26(+)	Chan 12(+)
31	Chan 41(+)	Chan 27(+)	Chan 13(+)
32	Chan 41(+)	Chan 27(+)	Chan 13(+)

Section 4 Application Notes

Please cut off the power supplier when you are changing a fuse in order to keep electricity safety.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable to	Remarks
V1.0 (20191216)	T8830S V10.00.00	The first Edition.