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VD 8913-T

Thermocouple Terminal Block

User Manual

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1. Product Description

The VD8913-T is a DIN Rail mounted terminal block which can be used to connect a number of thermocouples to a MADC 8403 via a TB8212 transition board.

The unit can accept up to thirteen thermocouples by connecting them to 26 terminals arranged in thirteen pairs.

The unit has an on-board 5 volt precision reference which is used to provide the current excitation for the cold junction temperature measuring PT-100 and to derive a small reference voltage for calibrating the two ADCs (A and B) of the 8403. It also provides +2.5V common mode voltage for the common connections of the 8403 in order to allow bipolar voltage measurements.

2. Specification

Power

+12V@ 20mA required to power the reference. This is normally supplied by an 8912 DC-DC Converter Board plugged onto the 8212 Transition Board.

Connectors

Refer to the table in section 4

SCSI

50 way connection to TB 8212 transition boards

Terminal Blocks

32-way Terminal Block - T1-T32 Terminal connector positions for thirteen thermocouples.

Cable clamp with rubber gasket and cover for isothermal block.

8-way Terminal Block 2 - connections for +12V, -12V, AGND, XC+, XC-, AGND, XT+, XT-

4-way Terminal Block 4 – AGnd connections for cable screens

4-way Terminal Block 5 – AGnd connections for cable screens

Thermocouple types

Suitable for J, K or T welded tip thermocouples or probes.

3. Setting up

8913-T

Potentiometer VR1 sets the +5V. This will have been factory set and should only be adjusted if there is a need to re-calibrate the system.

The AGND link enables the SCSI cable screen to be connected to analogue ground. This is normally unnecessary.

8212

Plug 8912 DC-DC Converter modules into each pair of converter sockets allocated to a used input.

LK1-4 should be left open.

J1, J3, J5, J7 should be set 2-3.

J2, J4, J6, J8 should be set 1-2.

8403

Set the 8403 jumpers as follows:-

J1	closed	J2	1-2 (+12VX)	J3	1-2 (-12VX)	J4	closed
J5	closed	J6	open	J7	open	J8	not fitted
J9	not fitted						

LNK1 open. If VME +/12V is used (J2 & J3 2-3), LNK1 should be closed.

4. Connections

Thermocouples

Connect the thermocouple leads between the relevant terminals:-

Thermocouple 1 – terminals 1 & 2

“ 2 – terminals 3 & 4

“

“

Thermocouple 7 – terminals 13 & 14

Thermocouple 8 – terminals 17 & 18

“ 9 – terminals 19 & 20

“

“

Thermocouple 13 – terminals 27 & 28.

Remove the cold junction clamp/cover and make these connections. Add the cover ensuring that the thermocouple leads are clamped by the rubber gasket when the cover is tightened down.

8212 - 8913-T

Connect the 8913-T to the 8212 using a 50-way twisted pair SCSI-2 cable. Plug one end of the cable into the SCSI socket on the 8913-T. Plug the other end into the SCSI socket on the rear panel of the 8212 relevant to the site used on the 8002 Carrier Board by the associated 8403. The lowest connector is routed to site A and the top connector to site D.

5. Software

EPICS

The driver to control the 8403 with an 8913-T or 8913-P is:-

Hy8403ip.tar[1].gz

Other

Please contact Hytec if you wish to discuss your requirements for other types of driver.

6. 8913-T DIN-Rail Board Pin-out

SCSI 50-way	Terminal	Thermocouple	Signal	8403
26	1	1+	T1 referred to 2.5V	Ch1+
1	2	1-	+2.5V	Ch1-
27	3	2+	T2 referred to 2.5V	Ch5+
2	4	2-	+2.5V	Ch5-
28	5	3+	T3 referred to 2.5V	Ch2+
3	6	3-	+2.5V	Ch2-
29	7	4+	T4 referred to 2.5V	Ch6+
4	8	4-	+2.5V	Ch6-
30	9	5+	T5 referred to 2.5V	Ch8+
5	10	5-	+2.5V	Ch8-
31	11	6+	T6 referred to 2.5V	Ch7+
6	12	6-	+2.5V	Ch7-
32	13	7+	T7 referred to 2.5V	Ch4+
7	14	7-	+2.5V	Ch4-
33	15	+2.533V	mV Ref referred	Ch4+
8	16	+2.5V	+2.5V	Ch4-
34	17	8+	T8 referred to 2.5V	Ch8+
9	18	8-	+2.5V	Ch8-
35	19	9+	T9 referred to 2.5V	Ch1+
10	20	9-	+2.5V	Ch1-
36	21	10+	T10 referred	Ch5+
11	22	10-	+2.5V	Ch5-
37	23	11+	T11 referred	Ch2+
12	24	11-	+2.5V	Ch2-
38	25	12+	T12 referred	Ch6+
13	26	12-	+2.5V	Ch6-
39	27	13+	T13 referred	Ch3+
14	28	13-	+2.5V	Ch3-
40	29	+2.533V	mV Ref referred	Ch7+
15		+2.5V	+2.5V	Ch7-
41	31	PT-100	CJ referred	Ch8+
16	32	+2.5V	+2.5V	Ch8-
42				N/C
17				N/C
43	33			XT+
18	34			XT-
44				N/C
19				N/C
45	35			XC+
20	36			XC-
46	37			+12V
21				N/C
47				N/C
22				N/C
48	38			-12V
23				N/C
49				N/C
24	39,40,41,42,43			AGnd
50				AGnd
25	44,45,46,47,48			AGnd

