

**Drawing Title** Wiring assembly, 4-channel encoder I/F, for Acquisition Logic, internal  
**Drawing number:** AY14-077-001 **Date:** 13 July 2007  
**Revision:** E **Revision Date:** 2012/12/18

There are two variants of this wiring assembly, designated as follows  
 Tab /001: UTEX part number AY14-077-001/001 is OBSOLETE do not use.  
 Tab /002: UTEX part number AY14-077-001/002 See Table 2 below  
 The two variants differ in their pinout of the encoder signals. **Tab /002 is preferred.**

**Table 2: Pinout for AY14-077-001/002**

P1: Header	P2: DC-37S	DIRECTION	FUNCTION
1	1	-	GND
2	20	I/O	DIO 0; ENC 0 Step/CW
3	2	-	GND
4	21	I/O	DIO 1; ENC 0 Dir/CCW
5	3	-	GND
6	22	I/O	DIO 2; ENC 0 Quadrature A
7	4	-	GND
8	23	I/O	DIO 3; ENC 0 Quadrature B
9	5	-	GND
10	24	I/O	DIO 4; ENC 1 Step/CW
11	6	-	GND
12	25	I/O	DIO 5; ENC 1 Dir/CCW
13	7	-	GND
14	26	I/O	DIO 6; ENC 1 Quadrature A
15	8	-	GND
16	27	I/O	DIO 7; ENC 1 Quadrature B
17	9	-	GND
18	28	I/O	DIO 8; ENC 2 Step/CW
19	10	-	GND
20	29	I/O	DIO 9; ENC 2 Dir/CCW
21	11	-	GND
22	30	I/O	DIO 10; ENC 2 Quadrature A
23	12	-	GND
24	31	I/O	DIO 11; ENC 2 Quadrature B
25	13	-	GND

26	32	I/O	DIO 12; ENC 3 Step/CW
27	14	-	GND
28	33	I/O	DIO 13; ENC 3 Dir/CCW
29	15	-	GND
30	34	I/O	DIO 14; ENC 3 Quadrature A
31	16	-	GND
32	35	I/O	DIO 15; ENC 3 Quadrature B
33	17	-	+5V
34	36	-	+5V
-	18	-	No connection
-	19	-	No connection
-	37	-	No connection

**Bill of materials.**

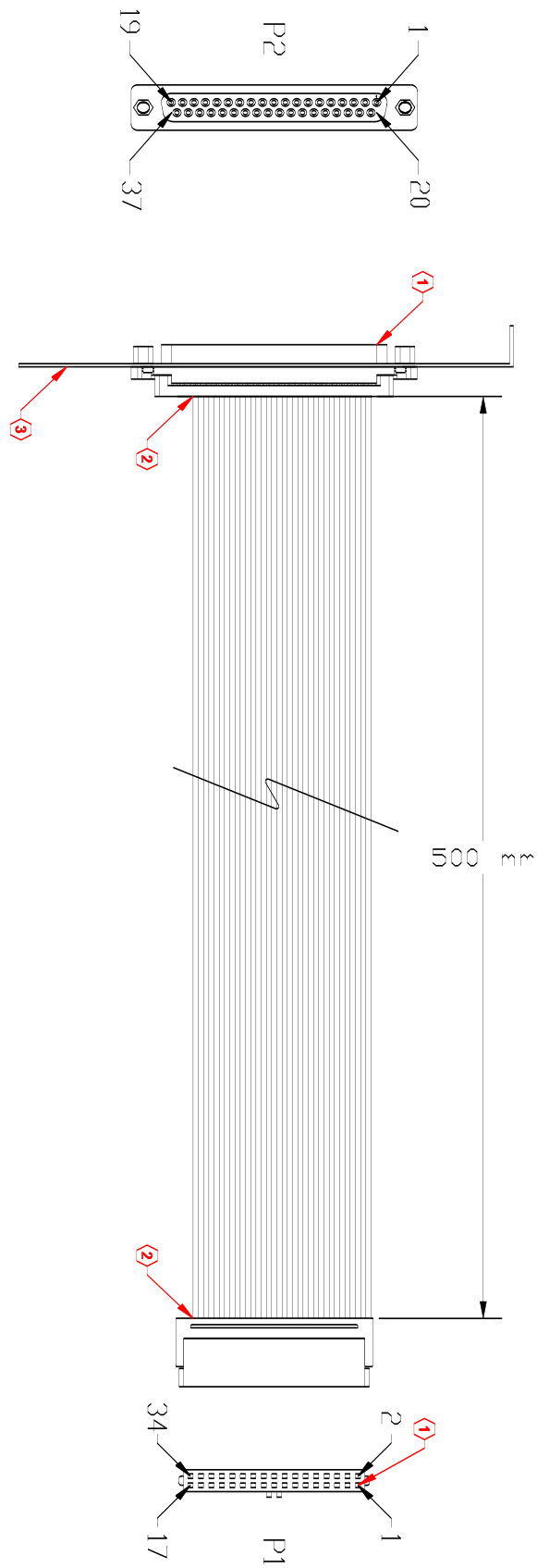
QTY	REF	MFG. P/N	MFG.	DESCRIPTION
1	P1	89134-0101	3M	Header, ribbon cable, 2x17 socket, straight, w/centre bump
1	P1	3448-89134	3M	Strain relief for 89134-0001 or -0101
1	P2	1658610-1	Amp	Connector, DC-37S, ribbon cable, threaded
1	P2	9200-5	Keystone	Bracket, for PC, w/cutout for 37-pin D-sub
2	P2	7230	Keystone	Jackpost, 3/16, #4-40
1 (alt)	Alt P2	89937-8000	3M	Connector, DC-37S, ribbon cable
2 (alt)	For Alt P2	N-180K	Spaenaur	Locknut, #4-40, 0.250 across flats
500 mm	W1	3302/34	3M	Ribbon cable, 34 x #28, 0.05 pitch, multicolour

**Assembly Instructions**

- Carefully determine correct orientation of all components:  
Contact # 1 at P1 = Conductor 1 on ribbon =Contact # 1 at P2
- Assemble
- Attach the PC bracket to P2 using the #4-40 jackscrews. If the ALT part is used for P2, use the locknuts.

**Test Instructions**

- Ensure there is continuity and low resistance (approx. equivalent to #28 wire) between P1 and P2 as per table AY14-077-001/002 above.
- Ensure there are no shorts between contacts at both P1 and P2



### Revision History

Revision	Date	Comment
-	19 Jan 2004	Initial release
A	2 Apr 2007	Corrected function of P1-8: Was "Quadrature A", is "Quadrature B"
B	8 June 2007	Added configuration for Tab /002 preferred variant.
C	11 June 2007	Added "4-channel" to title of drawing
D	13 June 2007	Added AMP 1658610-1 connector as standard (RoHS-comp) Added 3M 3302/34 cable to BOM
E	2012/12/17	Added Assembly and Test instructions Added CAD image for assembly orientation and example Convert to MS Word *.Docx file format