Special function specifications
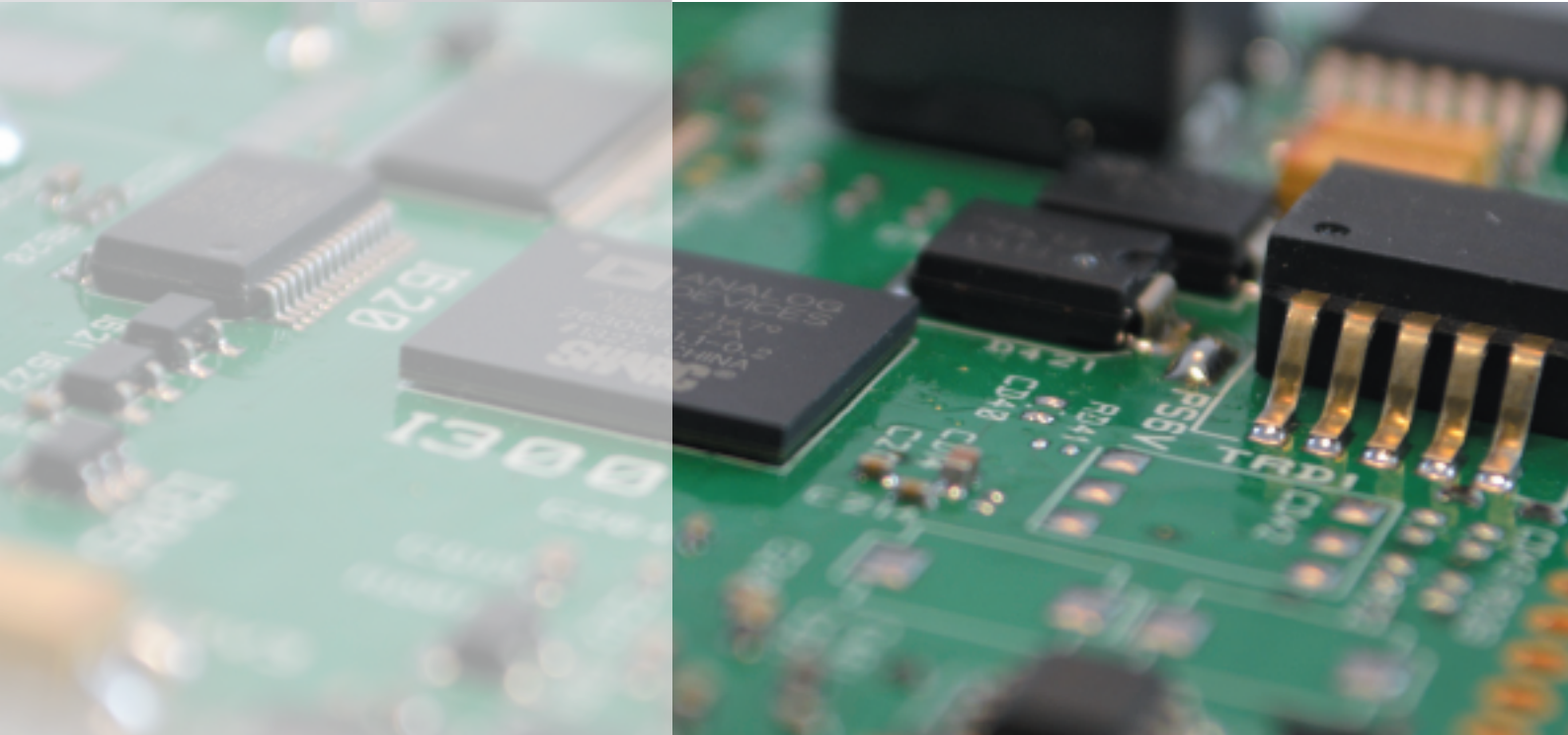
2000 & **4000** - UVW Encoder Feedback

| Function	Feedback UVW
Hardware	Option Feedback UVW
Firmware	IRT2615
Windows user	1.70 and up
Edition	09.04.2002

1. Introduction

The "Feedback UVW" is a hardware option for standard drives 2000/4000 used with incremental encoder feedback with UVW commutation signals.

This feedback replaces the resolver feedback and allows higher resolution (up to 8000 periods per revolution or 32000 points per revolution).

2. Wiring

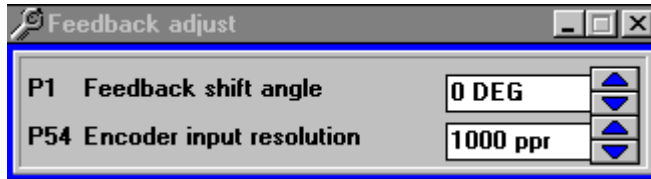Drive side   Motor side
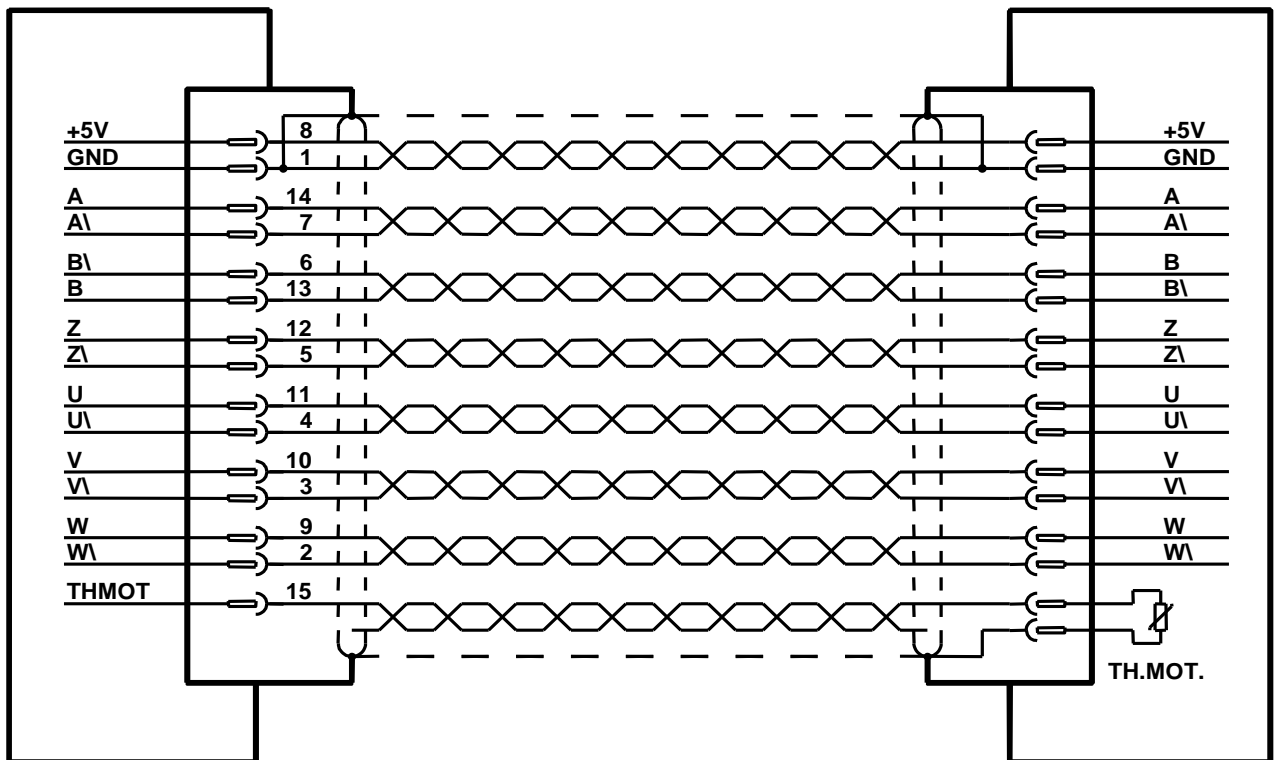
A, A/, B, B/, Z, Z/, U, U/, V, V/, W, W/, 5V, GND and Th.mot. To work properly and with respect of the trigonometric sense of rotation, B and B/ must be crossed.

3. Description and settings

On start up (or after a reset) the incremental position is set to zero, and the electric position for the commutation is given from the UVW signals. On the first change of the UVW status, the electric position is fixed and read out of the incremental ABZ signals.

Two parameters must be fixed. These parameters are grouped in the encoder command configuration accessible through the loop diagram (with the button 🔧 in

main menu tool bar and then the **Feedback**, in 2000 user for windows version 1.70).

Feedback adjust		
P1 Feedback shift angle	0 DEG	▲▼
P54 Encoder input resolution	1000 ppr	▲▼

P54 : Encoder input resolution

 1..8000 period per revolution : the number of periods received for a revolution.

 If the resolution is not known, turn the motor shaft left (counter-clockwise) for at least 2 turns, and look at the maximum value reached in P53. Divide this maximum value by 4 to determine the resolution.

P1 : Feedback shift angle

 +- 180 electric degrees, depends on the factory settings.

 If this value is not known, the setup tool can be used. Double click on the "Feedback / Motor type" and then on "Motor setup tool" and follow the instructions.

5. Control (read only)

P53 : Encoder input counter status
P55 : Encoder UVW input status. Bit0 = U, Bit1 = V, Bit2 = W.

 The right sequence is 1, 3, 2, 6, 4, 5 with a positive speed. The electric zero must be in the phase 1 (20 electric degrees from 5 and 40 from 3) to have a Feedback shift angle = 0. The electric degrees are the position degrees multiplied with the number of pair of poles.

6. Technical data

A,B maximum frequency	350 kHz
Power supply	5VDC, 350 mA
A, B, Z, U, V, W	Line receiver inputs (type LS32) with internal 1k load

6. Remarks

 On start up (or after a reset) the maximum torque can be reduced to 85 percent, due to the coarse electric position given from the UVW signals. After the first change of the UVW status, the electric position is fixed and the full torque is available.

Irtsa/10.04.2002/pau