ADwin-CO1L

Counter Option

for ***ADwin-light*** data acquisition boards

Version 1.1

March 1998

1. *ADwin-light* board with the counter *option ADwin-CO1L*

The ***ADwin-light*** board with the counter option ***ADwin-CO1L*** is equipped with a 16-bit up/down counter with two TTL-inputs. The TTL-inputs ("counter A" and "counter B") are connected with the two quadrature encoder signals A and B. These signals are shifted by 90°. The signals are internally decoded by quadrature evaluation. The maximum input rate at channel A/B is 1,25MHz, with an internal clock rate of 5MHz (CLK input to the counter).

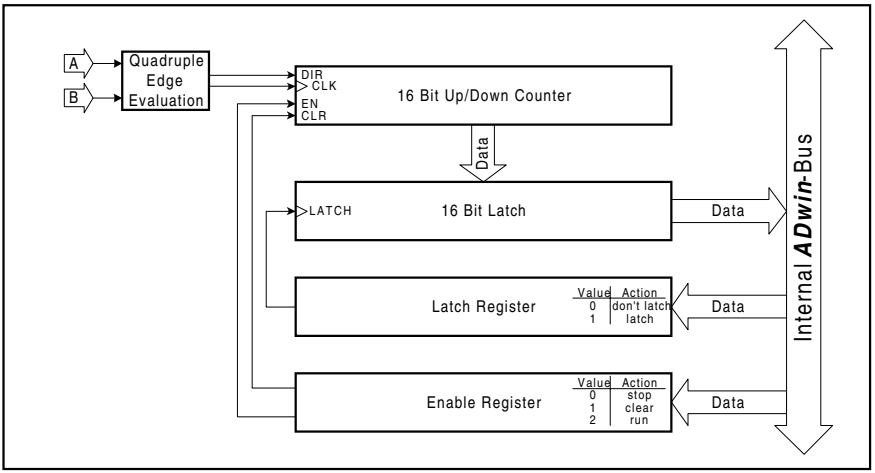

Figure 1: Schematic of CO1L option

1.1 Connector Pin Assignment

The 37-pin D-type socket at the rear of the ***ADwin-light*** board with counter option ***ADwin-CO1L*** has a pin assignment that differs from the pin assignment of the ***ADwin-light*** board without counter option: The pins 15 and 16 of this socket are the inputs for the up/down counters, shared with the digital inputs 4 and 5.

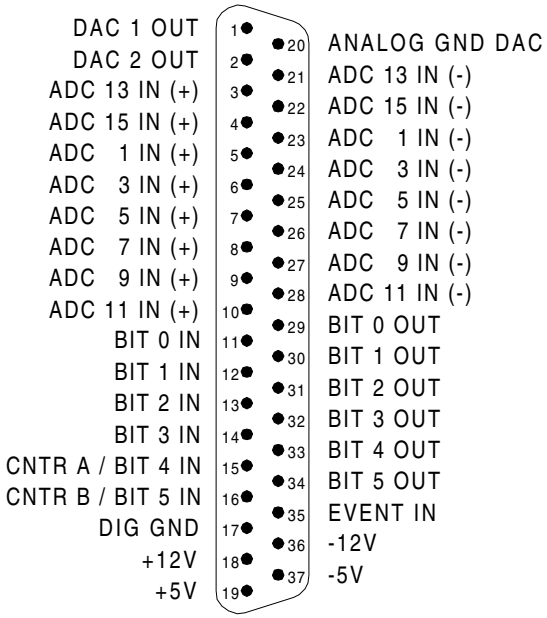

Figure 2: Pinout *ADwin-CO1L*

1.2 Technical Features of the Counter Inputs

type:	TTL
pull-down resistors:	5,6 kΩ
V_{IH}:	2,4 V min.
V_{IL}:	0.8 V max.
voltage range:	-0,3 bis 7 V
I_{IH}:	1 mA max.
I_{IL}:	0,2 mA max.

1.3 Control of the Up/Down Counter

In order to control the up/down counters the following ADbasic commands have to be used (contrary to those described in the ADbasic manual from Frebruary 1996):

ADbasic command	function
CO4_CLEAR	clear counter
CO4_READ	read counter
CO4_START	start counter
CO4_STOP	stop counter

1.4 ADbasic example

```
REM PAR_1 -> count value
REM PAR_2 -> count rate value

INIT:
  PAR_1=0
  PAR_2=0
  CO4_CLEAR           'clear counter
  CO4_START           'enable counter

EVENT:
  PAR_1=CO4_READ(1)   'read count value
  PAR_2=PAR_1-PAR_2   'calculate count rate value
```