



Binary I/O

1

A PRESENTATION OF INTERFACE SOLUTIONS

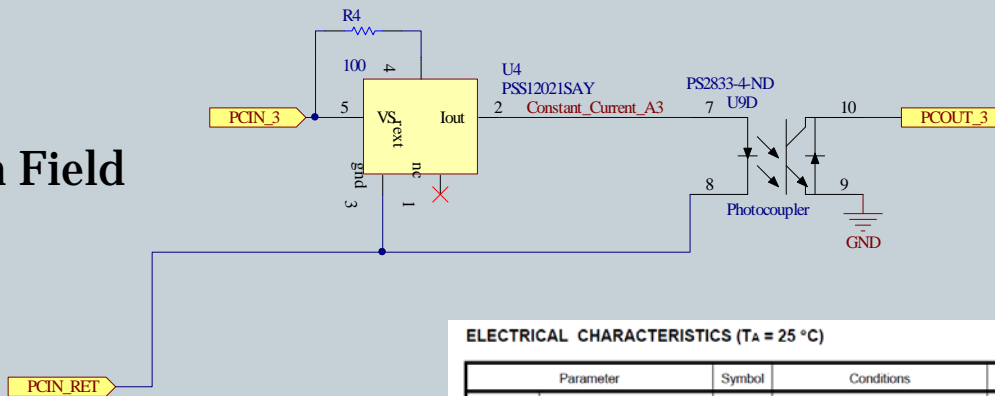
R. ABBOTT

Binary Input Building Block

2

$$I_{out} = \frac{0.617}{R_{ext}} + 15 \mu A$$

From Field



To Binary Input Card

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

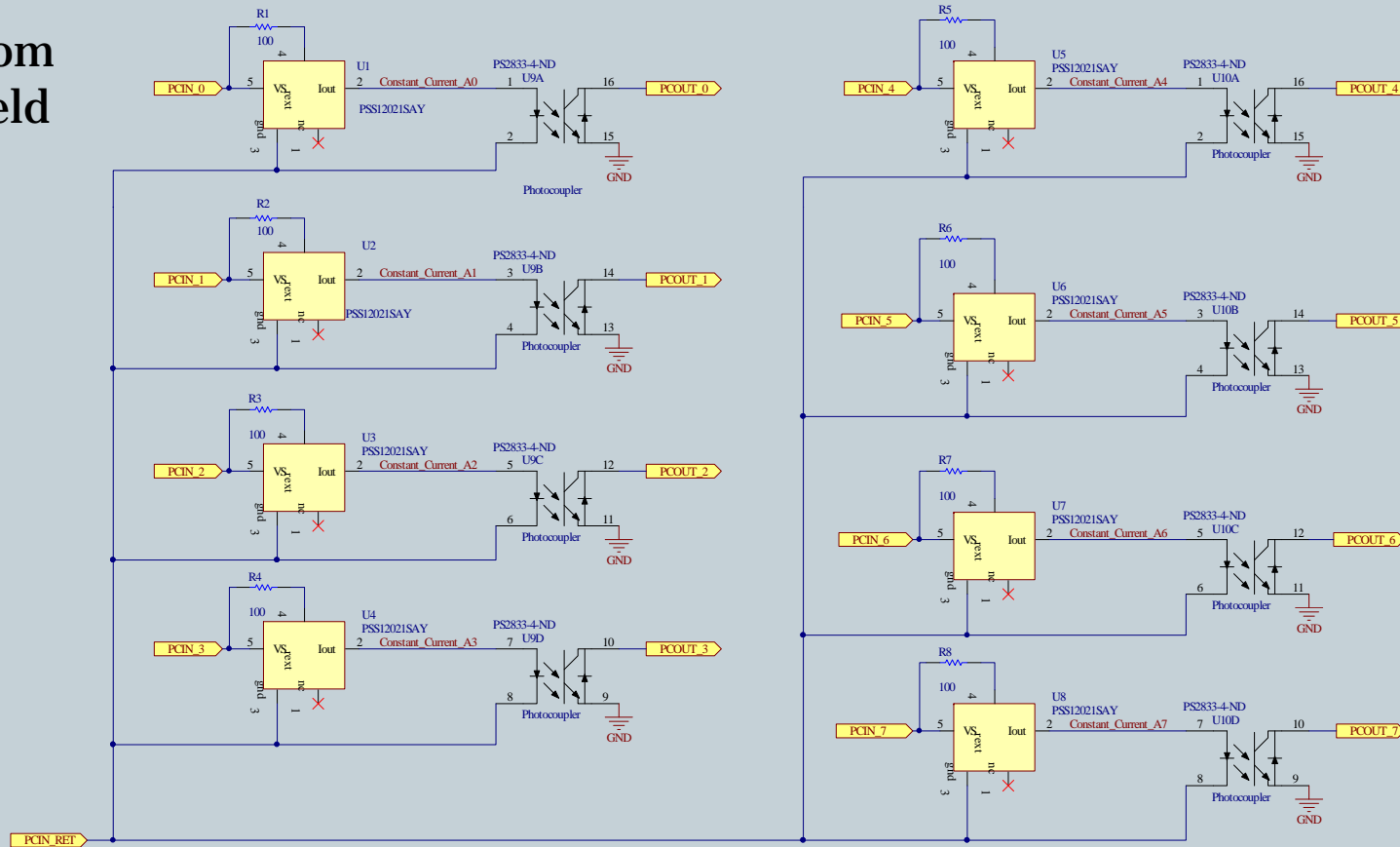
	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V _F	I _F = 10 mA		1.2	1.4	V
	Reverse Current	I _R	V _R = 5 V			5	μA
	Terminal Capacitance	C _t	V = 0 V, f = 1 MHz		15		pF
Transistor	Collector to Emitter Dark Current	I _{ceo}	I _F = 0 mA, V _{CE} = 300 V			400	nA
Coupled	Current Transfer Ratio (I _c /I _e)	CTR	I _F = 1 mA, V _{CE} = 2 V	400	2 000	4 500	%
	Collector Saturation Voltage	V _{CE(sat)}	I _F = 1 mA, I _C = 2 mA			1.0	V
	Isolation Resistance	R _{i-o}	V _{i-o} = 1 kV _{DC}	10 ¹¹			Ω
	Isolation Capacitance	C _{i-o}	V = 0 V, f = 1 MHz		0.4		pF
	Rise Time ⁻¹	t _r	V _{CC} = 5 V, I _C = 10 mA, R _L = 100 Ω		20		μs
	Fall Time ⁻¹	t _f			5		

Binary Input 8 Channel Section

3

Opto-coupler Input Circuit

From Field



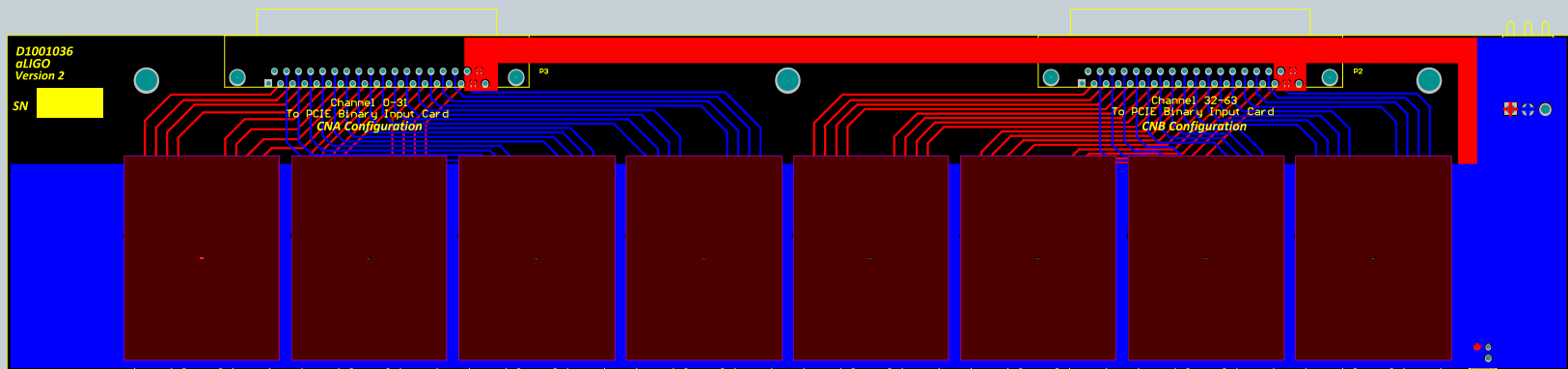
Binary Input Board Configuration

4

To Binary I/O Card in I/O Chassis

D37

D37



D9

D9

D9

D9

D9

D9

D9

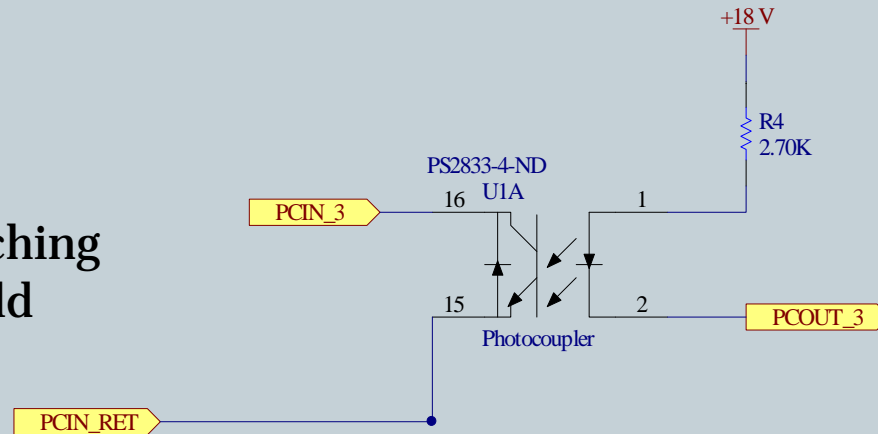
D9

From Field Modules in Banks of 8

Binary Output Building Block

5

For Switching
in Field



To Pull-down on
Binary Output
Card

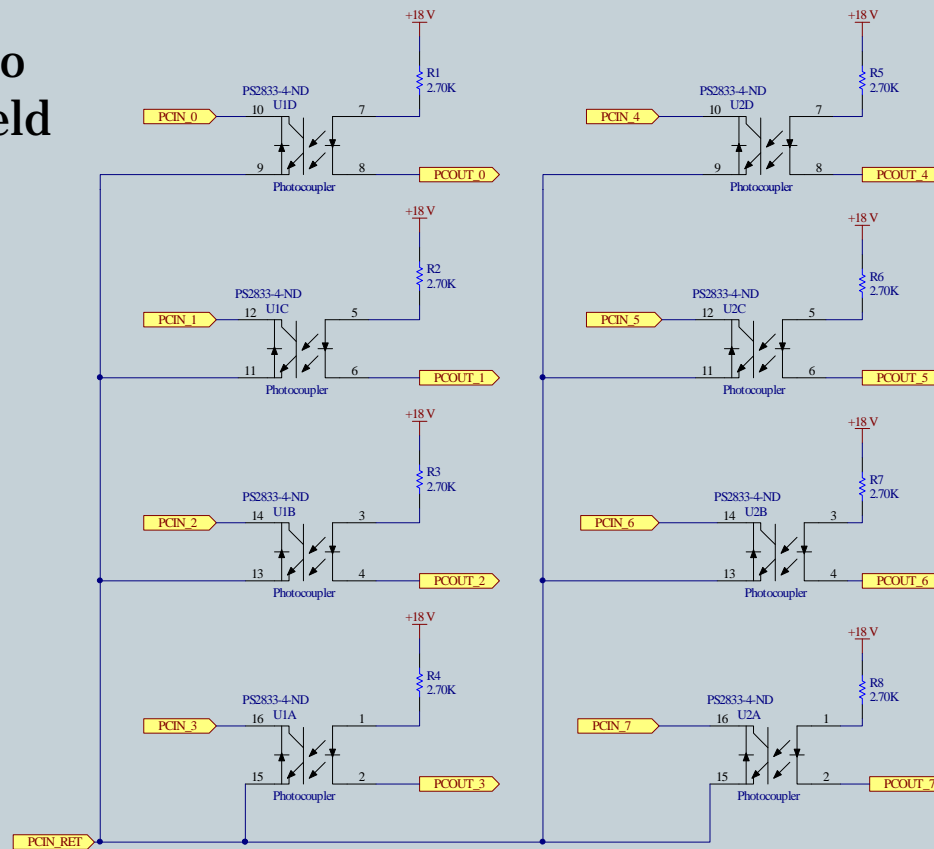
Binary Output 8 Channel Section

6

To Field

To Binary Out Card

Binary Output Opto-couplers



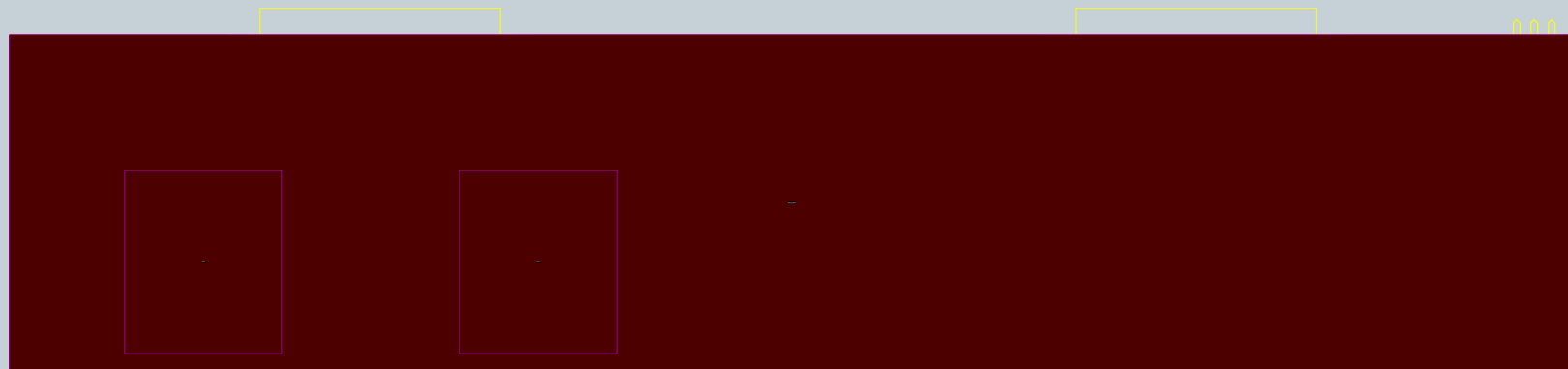
Binary Output Board Configuration

7

To Binary I/O Card in I/O Chassis

D37

D37



D9

D9

D9

D9

D9

D9

D9

D9

To Field Modules in Banks of 8