

## Product Datasheet - Technical Specifications



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## Specifications

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

### Digital input / output

Table 1. Digital I/O specifications

Digital type	82C55
Number of I/O	24 (Port A0 through Port C7)
Configuration	2 banks of 8 and 2 banks of 4, or 3 banks of 8
Pull up/pull-down configuration	All pins pulled up to Vs via 47K resistors (default). Selection available for pull down to ground. Hardware selectable via zero ohm resistor.
Input high voltage	2.0 V min, 5.5 V absolute max
Input low voltage	0.8 V max, -0.5 V absolute min
Output high voltage (IOH = -2.5 mA)	3.0 V min
Output low voltage (IOH = -2.5 mA)	0.4 V max
Power up / reset state	Input mode

### Counter

Table 2. Counter specifications

Counter type	Event counter
Number of channels	1
<i>Input source</i>	<i>CTR screw terminal</i>
Input type	TTL, rising edge triggered
Resolution	32 bits
<i>Schmidt trigger hysteresis</i>	<i>20 mV to 100 mV</i>
<i>Input leakage current</i>	<i>±1 µA</i>
Maximum input frequency	1 MHz
<i>High pulse width</i>	<i>500 ns min</i>
<i>Low pulse width</i>	<i>500 ns min</i>
Input low voltage	0 V min, 1.0 V max
Input high voltage	4.0 V min, 15.0 V max

### Power

Table 3. Power specifications

Parameter	Conditions	Specification
Supply current (Note 1)		20 mA typ, 40 mA max
+5V USB power available (Note 2)	Connected to Self-Powered Hub	4.5 V min, 5.25 V max
	Connected to Bus-Powered Hub	4.1 V min, 5.25 V max
Output Current (Note 3)	Connected to Self-Powered Hub	460 mA max
	Connected to Bus-Powered Hub	60 mA max

**Note 1:** This is the total current requirement for the RedLab 1024LS which includes up to 5mA for the status LED.

**Note 2:** Self-powered refers to USB hubs and hosts with a power supply. Bus-powered refers to USB hubs and hosts without their own power supply.

**Note 3:** This refers to the total amount of current that can be sourced from the USB +5V and digital outputs.

## General

Table 4. General specifications

Parameter	Conditions	Specification
<i>USB controller clock error</i>	25 °C	±30 ppm max
	0 to 70 °C	±50 ppm max
Device type		USB 1.1 low-speed
Device compatibility		USB 1.1, USB 2.0

## Environmental

Table 5. Environmental specifications

Operating temperature range	-0 to 70 °C
Storage temperature range	-40 to 70 °C
Humidity	0 to 90% non-condensing

## Mechanical

Table 6. Mechanical specifications

Dimensions	79 mm (L) x 82 mm (W) x 25 mm (H)
<i>USB cable length</i>	3 meters max
<i>User connection length</i>	3 meters max

## Main connector and pin out

Table 7. Connector specifications

Connector type	Screw terminal
Wire gauge range	30-16 AWG

Table 8. Connector pin out

Pin	Signal Name	Pin	Signal Name
1	Port C0	21	Port A0
2	Port C1	22	Port A1
3	Port C2	23	Port A2
4	Port C3	24	Port A3
5	Port C4	25	Port A4
6	Port C5	26	Port A5
7	Port C6	27	Port A6
8	Port C7	28	Port A7
9	GND	29	GND
10	n/c	30	PC+5V
11	n/c	31	GND
12	GND	32	Port B0
13	n/c	33	Port B1
14	n/c	34	Port B2
15	GND	35	Port B3
16	n/c	36	Port B4
17	GND	37	Port B5
18	n/c	38	Port B6
19	GND	39	Port B7
20	CTR	40	GND