

43-MILLIMETER COMPATIBLE SWIPE READER TECHNICAL REFERENCE MANUAL

Part Number 99875146-4

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REGISTERED TO ISO 9001:2000
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REVISIONS

Rev Number	Date	Notes
1	22 Oct 99	Initial Release
2	16 May 03	Front Matter: added ISO line to logo, changed Tech Support phone number, added new warranty statement, changed warranty from 90 days to 1 year; Sec 1, Specifications, power requirements: Changed single and dual tracks from 2.4 V to 2.7 V.
3	13 May 08	Updated dimensions drawing
4	07 July 08	Added Appendix A

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FCC Warning Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian DOC Statement

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

CE STANDARDS

Testing for compliance to CE requirements was performed by an independent laboratory. The unit under test was found compliant to Class A.

UL/CSA

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

RoHS STATEMENT


When ordered as RoHS compliant, this product meets the Electrical and Electronic Equipment (EEE) Reduction of Hazardous Substances (RoHS) European Directive 2002/95/EC. The marking is clearly recognizable, either as written words like "Pb-free" or "lead-free", or as another clear symbol ().

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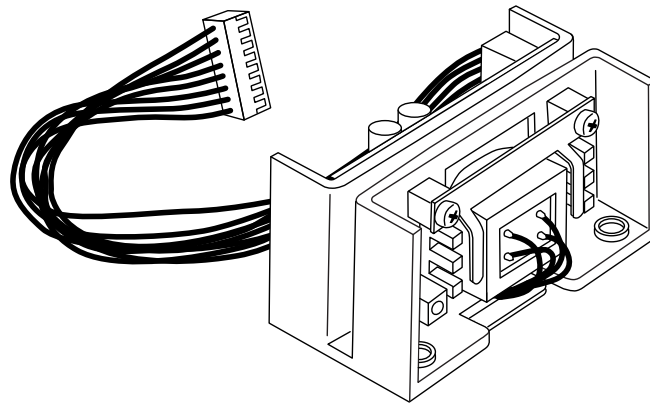


Figure 1-1. 43-millimeter Compatible Swipe Reader

SECTION 1. FEATURES AND SPECIFICATIONS

The 43-millimeter OEM Swipe Reader has a TTL level interface and is designed for use in retail, access control, and time and attendance environments. This Reader is in compliance with industry specifications, including ANSI/ISO Standards 7810, 7811-1 through -6, 7812, and 7813. The Reader can be customized. Bidirectional read capability is available.

CONFIGURATIONS

Configurations and part numbers are as follows:

Part Number	Read	Cable Length
21044001	Track 1 & 2	3.386" (86mm)
21044002	Track 2 & 3	3.386" (86mm)
21044003	Track 2	3.386" (86mm)
21044004	Track 1 & 2	8.661" (220mm)

SPECIFICATIONS

IEC: Meets or Exceeds Requirements for:	IEC 1000-4-2 ESD (Electro Static Discharge) IEC 1000-4-3 Radiated EMC Field (2X requirement) IEC 1000-4-4 Electrical Fast Transient Burst requirement (transmission on I/O cable)
Flammability	Meets UL94V-0
Recording Method	Two-Frequency Coherent Phase (F2F)
Speed	Card speed through the unit may vary from: 2-125 ips at 75 bpi 2-60 ips at 210 bpi
Power Requirements	Single Track: 2.7 to 5.5VDC at 1mA, typical Dual Track: 2.7 to 5.5VDC at 2mA, typical
Output Signal Levels	$V_{ol} = 0.4V$ at 2mA $V_{oh} = V_{cc} - 0.5V$ at -2mA
Operating Temperature	-30°C to 70°C
Operating Humidity	10% to 90% relative humidity
Life	300,000 passes Single Track 1,000,000 passes Dual Track
Dimensions	Length: 1.693" (43mm) Height: 0.902" (22.9mm) Width: 0.866" (22.0mm)
Cable Length:	See configuration table above
Connector	See Section 2, Connectors

REFERENCE DOCUMENT

I/O Interface for TTL Swipe Readers, Technical Reference Manual, P/N 99875148

43-Millimeter Compatible Swipe Reader

SECTION 2. INSTALLATION

This section consists of installation and checkout of the Reader.

MOUNTING

The dimensions for mounting are shown in Figure 2-1.

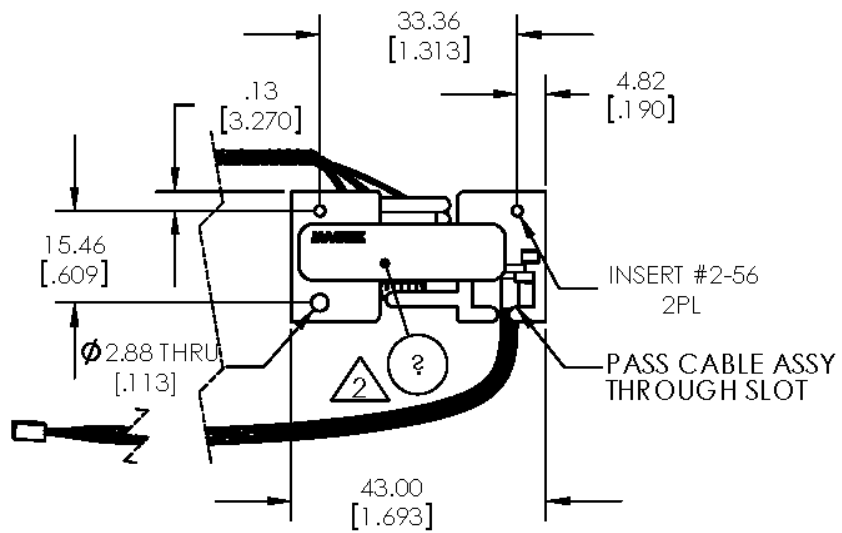


Figure 2-1. Reader Mounting Dimensions (Typical)

CONNECTORS

Single Track I/O Connector is shown in Table 2-1, and the Dual Track I/O Connector is shown in Table 2-2.

Table 2-1. I/O Connector for Single Track, 8 Pin

	Pin Number	Color	Signal
Connector for Single Track, 8 Pin JAE IL-Y-8S-S15C3 1.5mm Contact Spacing	1	Brown	GND
	2	Gray	$\overline{\text{STROBE}}$
	3	White	$\overline{\text{DATA}}$
	4	Blue	$\overline{\text{CARD PRESENT}}$
	5	NC	
	6	NC	
	7	NC	
	8	Red	V _{CC}

Note: V_{CC} = 2.4 to 5.5 VDC

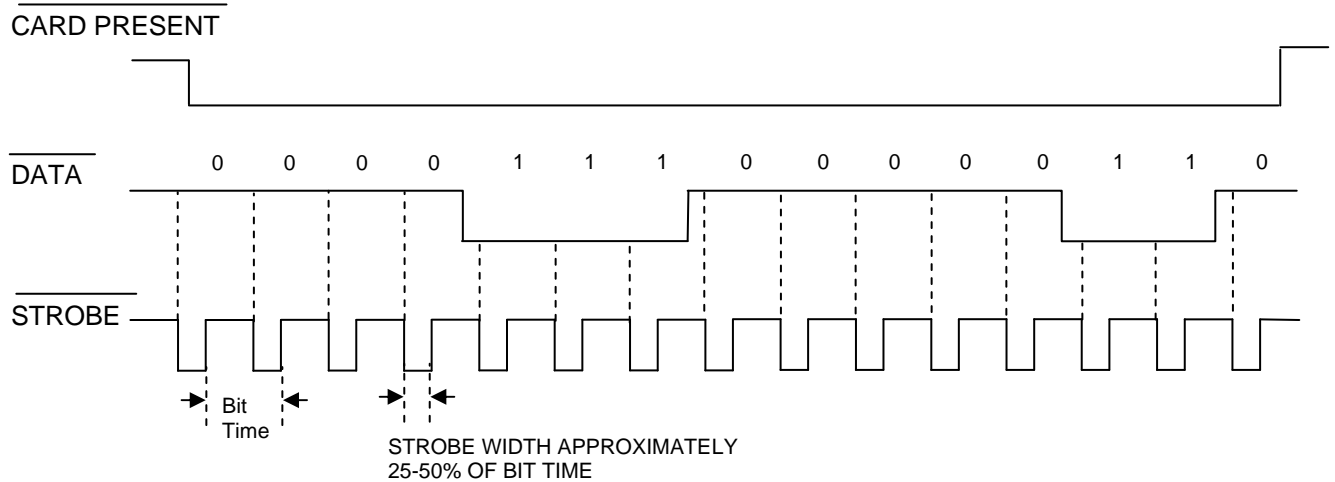
Table 2-2. I/O Connector for Dual Track, 8 Pin

	Pin Number	Color	Signal
Connector for Dual Track, 8 Pin JAE IL-Y-8S-S15C3 1.5mm Contact Spacing Mates to JAE Headers: Straight Pin Header: IL-Y-8P-S15T2-EF Right Angle Pin Header: IL-Y- 8P-S15L2-EF	1	Brown	GND
	2	Gray	$\overline{\text{STROBE (TK 2)}}$
	3	White	$\overline{\text{DATA (TK 2)}}$
	4	Blue	$\overline{\text{CARD PRESENT (TK2)}}$
	5	Yellow	* $\overline{\text{STROBE (TK 1)}}$
	6	Orange	* $\overline{\text{DATA (TK 1)}}$
	7	Green	* $\overline{\text{CARD PRESENT (TK 1)}}$
	8	Red	V _{CC}

* Track 1 will be designated Track 3 in P/N 21044002.

Note: V_{CC} = 2.4 to 5.5 VDC

TIMING



Notes:

1. Time out of the CARD PRESENT signal occurs approximately 150 ms after the last strobe transition.
2. DATA is valid 1.0μ sec before the negative edge of STROBE.

Figure 2-2. Timing

DATA

The Data signal is valid while the strobe is low. If the Data signal is high, the bit is a zero. If the Data signal is low, the bit is a one.

STROBE

The Strobe signal indicates when Data is valid. It is recommended that Data be loaded by the user with the leading edge (negative) of the Strobe.

CARD PRESENT

Card Present will go low after 14/15 flux reversals from the head. Card Present will return high 150 milliseconds after the last flux reversal.

When no card is being moved through the unit, the Data, Strobe, and Card Present signals are high. The signal timing diagram shown above represents the data along with other signals that are generated during the reading process.

APPENDIX A. DRAWINGS

The drawing shown in this section show the mounting dimensions of the 43mm Reader.

21044001- Dimensions drawing for 43mm reader

43-Millimeter Compatible Swipe Reader

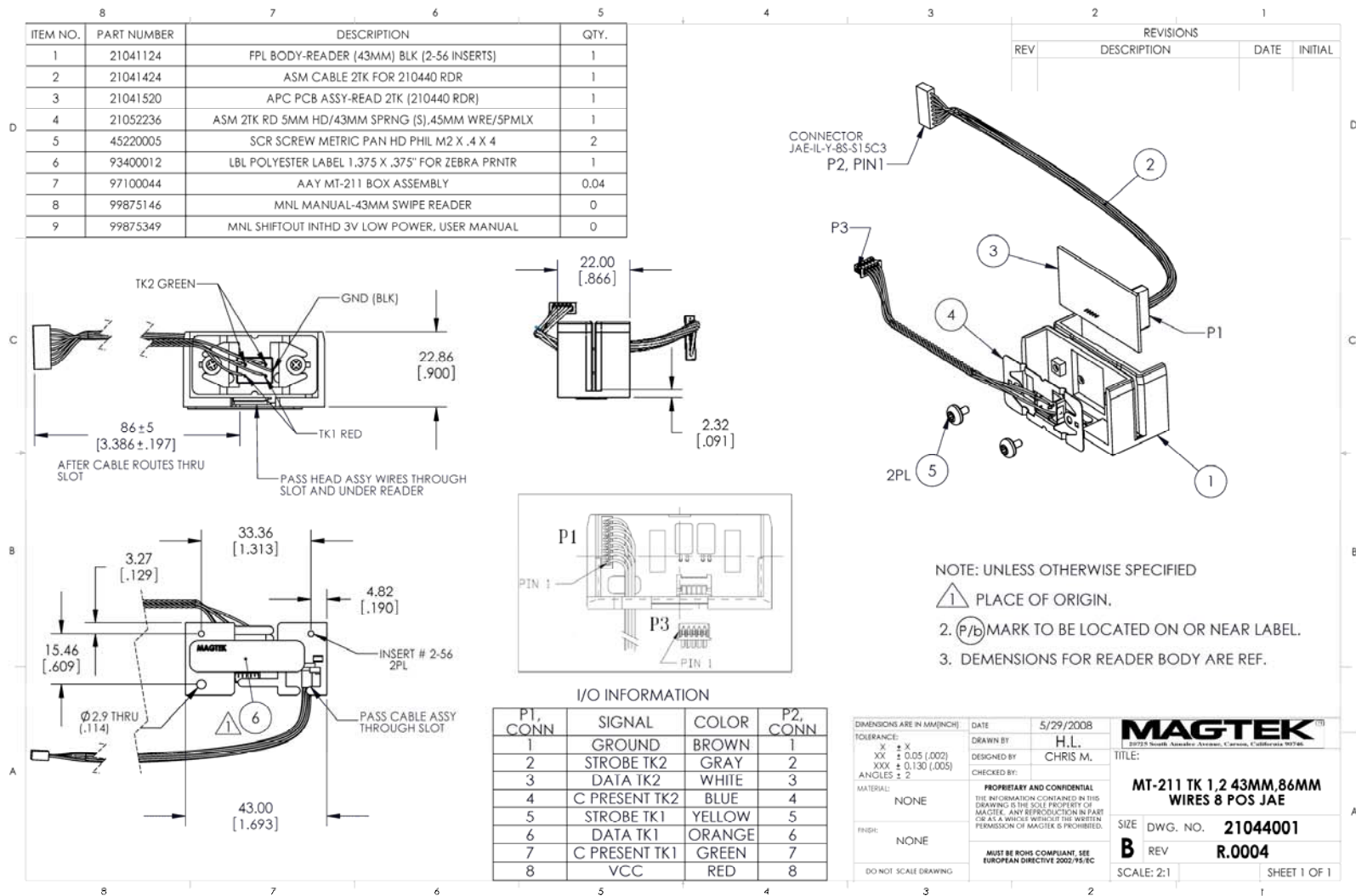


Figure A-1. 43mm Dimensions