USER MANUAL

MODEL 2026P
Parallel to Serial/
Serial to Parallel
Interface Converter

PE PATTON Electronics Co.

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 2026P components to be free from defects, and will—at our option—repair or replace the products should they fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If these products fail or do not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of these products. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE

The Model 2026P generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. They have been tested and found to comply with the limits for Class A computing devices in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If they do cause interference to radio or television reception, which can be determined by disconnecting the RS-232 interface, the user is encouraged to try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

1.3 SERVICE

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Support: **(301) 975-1007**; **http://www.patton.com**; or, **support@patton.com**.

NOTE: Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 2026P. Technical Support hours: **8AM to 5PM EST, Monday through Friday.**

2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support at (301) 975-1007.

2.1 FEATURES

- Converts parallel data to serial data and vice versa
- Automatically selects parallel-to-serial and serial-to-parallel operation
- Automatically selects DCE/DTE modes
- Serial data rates to 38,400 bps
- No AC power required
- Supports both software and hardware flow control
- Interface or AC Powered
- Ultra-miniature size
- Made in the USA

2.2 DESCRIPTION

The Patton Model 2026PSerial to Parallel and Parallel to Serial Converter automatically converts RS-232 serial data to parallel data format and vice versa. Incorporating advanced microprocessor technology, the 2026P automatically senses and selects parallel and serial modes, as well as DCE/DTE modes. The Model 2026P supports serial data rates to 38.4 Kbps.

For easy configuration, the Model 2026P features a convenient set of configuration switches. These internally accessible configuration switches allow the user to control baud rate, parity, word length and flow control.

Housed in a miniature ABS plastic case, the Model 2026P comes equipped with a DB-25 female connector on the serial side and a Centronics 36 pin male connector on the parallel side. Able to recieve power directly from the RS-232 interface, the Model 2026P also comes with a wall-mount power supply for low power applications.

3.0 CONFIGURATION

The Model 2026P is simple to install and designed for excellent reliability. The following instructions will help you set up and install your converter properly. If you have any questions, please call Patton Technical Support at (301) 975-1007.

3.1 CONFIGURATION SWITCHES

The Model 2026P uses a set of eight internal DIP switches (see Figure 1) that allow configuration to a wide range of applications. You must open the case to gain access to the internal switches. To open the case, insert a small screwdriver into one of the slots on the side of the plastic case. Then twist from side to side until the case opens.

The configuration switches allow you to select data rates, parity, word length and flow control selection. The following section describes all switch locations, positions and functions.
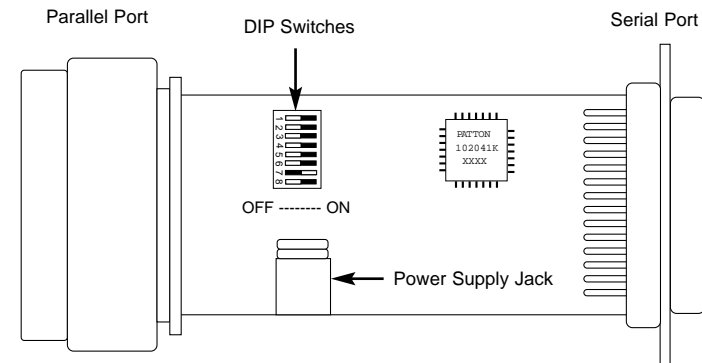

Figure 1. The Location of the Model 2026P Configuration Switches

To configure your unit, use a small screwdriver and gently push each switch to its proper setting. The ON and OFF positions are shown in Figure 2. Default settings for the DIP switches are shown in the table on the following page. Detailed settings follow the table.
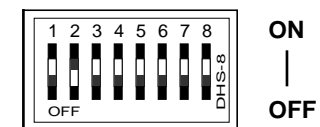

Figure 2. The miniature configuration switch package

DIP SWITCH SUMMARY TABLE		
Position	**Function**	**Factory Default**
SW1	Flow Control	Off Hardware
SW2	Bit Error Rate Test	Off De-activated
SW3	Data, Parity, Stop Bits	Off
SW4	Data, Parity, Stop Bits	Off 8B, NP, 1S
SW5	Data, Parity, Stop Bits	Off
SW6	Data Rate	Off
SW7	Data Rate	Off 9600 bps
SW8	Data Rate	Off

3.2 CONFIGURATION SWITCHES SW1 - SW8

This section provides detailed information about the function of each DIP switch and lists all possible settings.

Switch 1: Hardware/Software Control/BERT Direction

The setting for Switch 1 determines whether the 2026P uses hardware or software (i.e. XON/XOFF) flow control. Switch 1 is alternatively used to determine the direction of the BERT output message whenever the BERT is activated (See Switch 2, below).

Flow Control	SW1
Hardware	OFF
Software	ON

BERT Direction	SW1
Parallel	OFF
Serial	ON

Switch 2: Bit Error Rate Test (BERT)

Use Switch 2 to activate a Bit Error Rate Test (BERT) in the direction of the serial *or* parallel interface. This test can be used to determine whether the 2026P is working properly. When BERT is activated, the 2026P outputs the following Barber Pole pattern, which represents every ASCII character on a standard US keyboard:

0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\}^_'abcdefghijklmnopqrstuvwxyz{|}~

Bit Error Rate	SW2
BERT Activated	ON
BERT De-activated	OFF

NOTE: When you activate the BER Test, the 2026P "memorizes" the setting of Switches S1, S3,S4, S5, S6, S7, and S8 to perform the test. If you modify any of these switches, you must de-activate Switch 2 in order for the changes to take effect.

Switch 3 through 5: Data, Parity and Stop Bit

Switches 3 through 5 are used to specify the data, parity and stop bits. The following table shows the settings that may be used:

Data	Parity	Stop Bit	SW3	SW4	SW5
7B	EP	1S	ON	ON	ON
7B	OP	1S	OFF	ON	ON
7B	NP	2S	ON	OFF	ON
7B	EP	2S	OFF	OFF	ON
7B	OP	2S	ON	ON	OFF
8B	EP	1S	OFF	ON	OFF
8B	OP	1S	ON	OFF	OFF
8B	NP	1S	OFF	OFF	OFF

Switches 6 through 8: Frequency and Data Rate

Switches 6 through 8 determine the frequency and data rate. The following chart shows the settings that may be used:

Serial Data Rate			
Data Rate	SW6	SW7	SW8
300	OFF	OFF	ON
600	ON	OFF	ON
1200	ON	ON	OFF
2400	OFF	ON	ON
4800	ON	ON	ON
9600	OFF	OFF	OFF
19200	ON	OFF	OFF
38400	OFF	ON	OFF

4.0 INSTALLATION

The Patton Model 2026P are very simple to install. Once you have configured the DIP switches, just plug your converter in to a standard cable and you're ready to go. Figure 3 illustrates the proper connections for the Model 2026P. If you have special-ordered a non-standard connector, your connections may be different.
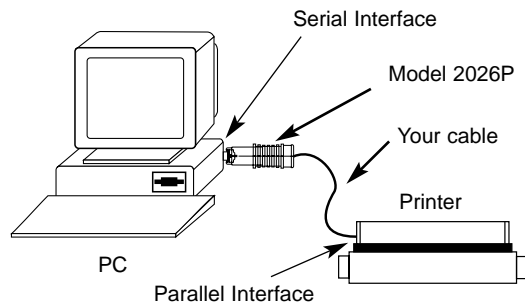

Figure 3. Installing the Model 2026P

4.1 POWER CONNECTION

In many cases, the Model 2026P will run without being connected to external power. However, additional power may be necessary in certain applications that use low power RS-232 devices.

The 120VAC U.S. wall transformer version supplies +9V regulated DC up to 500mA. Connect this wall transformer to the Model 2026P by means of a cannon jack on the side panel. The Model 2026P is powered-up as soon as it is plugged into an AC outlet–there is no power switch.

5.0 OPERATION

Once your interface converter is properly configured and installed, it should operate transparently—as if it were a standard cable connection. Operating power is derived from the RS-232 data and control signals; there is no "ON/OFF" switch.

APPENDIX A

PATTON MODEL 2026P SPECIFICATIONS

Interface:	Asynchronous, RS-232C compatible
Connectors:	Serial, DB-25 female; Parallel, Centronics 36 pin male
Data Rates:	0 - 38,400 Kbps
Power Supply:	1) Uses power from RS-232 interface; 2) 9VDC, 500mA power supply 3) Typical Maximum power consumption = 100mW @5V (20mA)
Data Format:	7 or 8 bits; 1 or 2 stop bits; even, odd or no parity
Flow Control:	[Serial Side as DCE = CTS (5)/DSR (6)] [Serial Side as DTE = DTR (20)]
Temperature Range:	0-60°C (32-140°F)
Altitude:	0-10,100 feet
Humidity:	5 to 95% non-condensing
Dimensions:	4.35" x 2.9" x 0.8" (11.0mm x 7.4mm x 2.0mm)
Weight:	2.6 oz. (73.8 grams)

PATTON MODEL 2026P INTERFACE CONNECTIONS

36 PIN CENTRONICS PARALLEL PORT CONNECTIONS

Pin	Description	Direction
1	Strobe	Output
2	Data bit 0	
3	Data bit 1	
4	Data bit 2	
5	Data bit 3	} I/O
6	Data bit 4	
7	Data bit 5	
8	Data bit 6	
9	Data bit 7	
10	Acknowledge	Input (active low)
11	Busy	Input (active high)
12	Paper end	
13	Select	
18	+5 volts	
32	Error	(tied to +5V)

(16, 17, 19, 20, 21, 22, 23, 24,
25, 26, 27, 28, 29, 30, 33, 36) } Ground

Note: All other pins are unconnected

DB-25 PORT CONNECTIONS

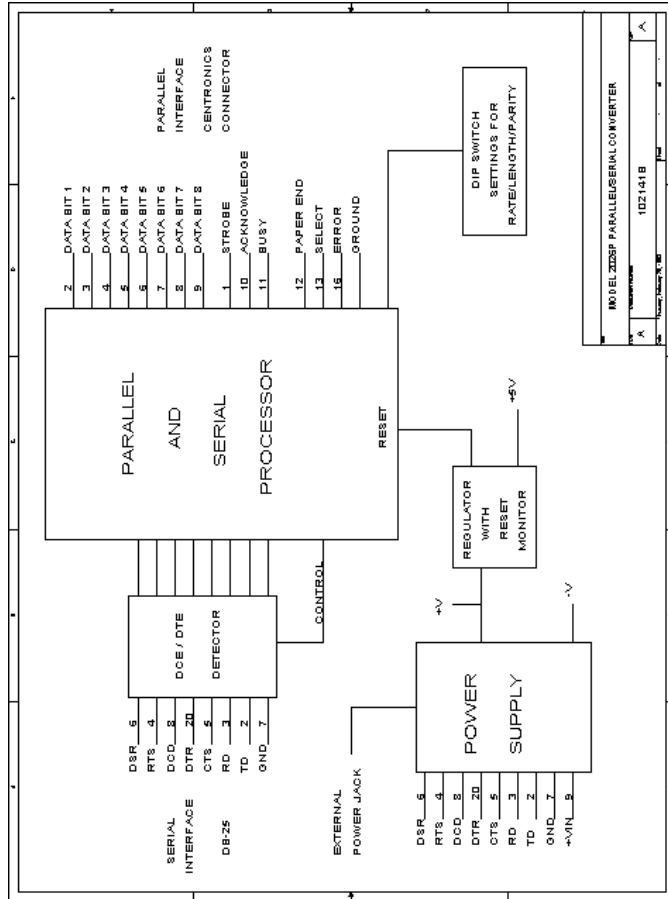| Pin	Name	Description
1	FG	Connected to pin 7
2	TXD	Transmit Data; Power source when conn. to DTE
3	RXD	Receive Data (sends XON/XOFF only); Power source when connected to DCE
4	RTS	Request to Send; Power source when connected to DTE
5	CTS	Clear to Send; Power source when conn. to DCE
6	DSR	Data Set Ready; Power source when conn. to DCE
7	SG	Signal Ground
8	DCD	Carrier Detect; Power source when conn. to DCE
9	+V in	Used as an external power source
20	DTR	Data Terminal Ready; Power source when conn. to DTE

Note: All other pins are unconnected

**PATTON MODEL 2026P
FACTORY REPLACEMENT PARTS AND ACCESSORIES**

Patton Model #	Description
08059DCI	230VDC (+9V ±5% reg. DC/500mA) International Adapter
0805B	110VDC (+9V ±5% reg. DC/500mA) American Adapter
07M2026P	User Manual

APPENDIX C

PATTON MODEL 2026P BLOCK DIAGRAM