





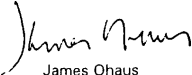
Ohaus Corporation
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SF42 Impact Printer Instruction Manual

Declaration of Conformity We, Ohaus Corporation, declare under our sole responsibility that the printer model listed below marked with "CE" - is in conformity with the directives and standards mentioned.
Printer model SF42

Marked with: 	EC Directive (Including applicable amendments) 73/23/EC Electrical equipment for use within specified voltage limits 89/336/EC Electromagnetic compatibility	Standard EN60950 (VDE 805) Safety requirements for Electrical Components EN61326 EMC Emissions, residential, commercial and light industry. EN61326:1997 A1:1998 (minimal requirements) EMC Immunity: Minimum test requirements. EN61000-3-2:1995 + A1:1998 + A2: 1998; EN61000-3-3:1995 EMC Part 3 (for equipment rated input current < or=16A) Limits- Section 2: Limits for harmonic current emissions Limits- section 3: Limitation of voltage fluctuations and flicker in low voltage supply systems
Last two digits of the year in which the CE marking was affixed: 01		
Additional Standards		
	CAN/CSA-C22.2 No. 950; UL Std. No. 1950 Safety requirements for Electrical Equip. for measurement, Control and Laboratory Use, Part 1; General Requirements FCC, Part 15, class B Emission	

ISO 9001 Registration for Ohaus Corporation. Ohaus Corporation, USA, was examined and evaluated in 1994 by the Bureau Veritas Quality International, BVQI, and was awarded ISO 9001 registration. This certifies that Ohaus Corporation, USA, has a quality system that conforms with the international standards for quality management and quality assurance (ISO 9000 series). Repeat audits are carried out by BVQI at intervals to check that the quality system is operated in the proper manner.



James Ohaus
President

Ohaus Corporation, Pine Brook, NJ

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modifications to this equipment are not permitted.

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INTRODUCTION

This manual covers installation and operation for the Ohaus Model SF42 Impact Printer. To ensure proper operation of the printer, please read this manual completely.

DESCRIPTION

The Ohaus Model SF42 Impact Printer, is a dot-matrix microprinter which can interface directly to various Ohaus Balances which contain an RS232 Interface connector. The printer interface is serial, RS232 compatible. There are two LED lamps, Power and SEL indicators, and two push button switches, SEL select on/off line and LF line feed switch. The printer utilizes an impact dot matrix head in a 5 x 7 format with 42 characters per line, and can print 40 lines per minute. Printing paper width is 2.25 "/5.7cm. Power is supplied through an AC Power Adapter which is included.

UNPACKING

Your SF42 was shipped with the following items:

- AC power adapter
- Instruction manual
- A paper roll and a ribbon are loaded inside the printer before packing.

It is recommended to save the carton and packing material for storing, transporting the printer or returning it for service.

INSTALLATION

Environment

The printer should always be used in an environment which is free from corrosives, vibration, and temperature or humidity extremes.

This product is intended for professional measurement & test use.

Controls

The controls, indicators and connectors of the model SF42 impact printer are shown in Figure 1.

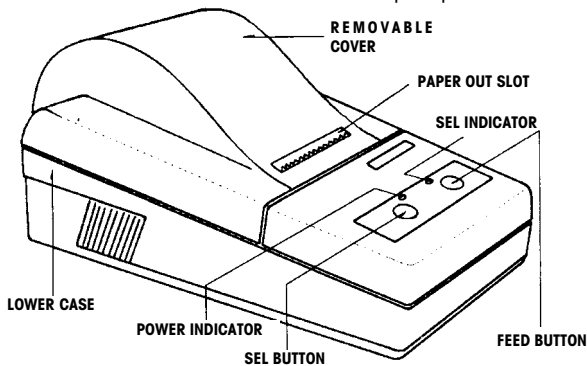


Figure 1. SF42 Printer Controls.

Serial Interface Connection

The 25 pin connector is located on the back of the printer. The serial interface is standard RS232C compatible.

TABLE1. SERIAL INTERFACE

Pin No.	Signal	Source	Description
2	TXD	Printer	Printer sends control code XON/OFF to host when using handshaking of XON/XOFF.
3	RXD	Host	Printer receives data from host computer.
4	RTS	Printer	Signal sets "MARK" state to indicate the printer is BUSY and cannot receive data. However, it sets "SPACE" state to indicate the printer is READY and can accept data.
7	GND	...	Signal ground.

NOTE: "Source" represents signal source.

Installing the Ribbon Cassette

The ribbon cassette has been installed at the factory. When the ribbon has to be replaced after use, install the ribbon as follows:

1. Open the cover as shown in Figure 2.
2. Remove the used ribbon cassette from the printer as shown in Figure 3.
3. Install a new ribbon cassette as follows:

Put the left end slightly on the axle of the gear that is on the left side of the printer mechanism. Meanwhile, keep the right end little higher than the left.

If the left end is not seated to the axle completely, press the knob of the cassette and turn it slowly clockwise as shown by the arrow.

4. After the left end of the cassette is in place, (fully seated) press the right end of the cassette. Now, check that the ribbon is tight and on the inside of the cassette. Turn the knob clockwise again until the ribbon is on the outside of the cassette.
5. Close the cover of the printer.

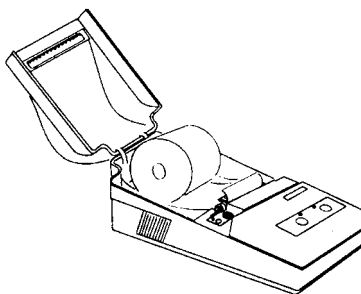


Figure 2. Printer with Cover Opened.

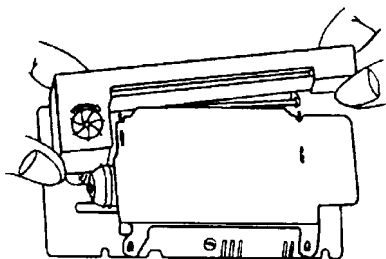


Figure 3. Removing Cassette Ribbon.

Power Connections

The SF42 Printer uses an external power adapter that supplies 9V dc rated at 600mA. The polarity in the connector is shown in Figure 4. Connect the power adapter to the printer and a suitable power source.



Figure 4. Polarity of the Power Connector.

Loading the Paper Roll

The SF42 Printer has a paper roll loaded at the factory, however, the paper end is not positioned in the paper entry slot. The reason is to protect the printer and ribbon from damage during shipping and storage periods. Before using the printer, load the paper as follows:

1. Open the cover on the printer as shown in Figure 2.
2. Cut the end of the paper into the following shape as shown in Figure 5.
3. Connect the Power Adapter to the printer and plug it into a suitable power source.
4. The SEL (SElect) button is an ON/OFF toggle. Press it to OFF. The SEL indicator is off.
5. Press and hold FEED button to feed the paper into the paper entry slot. The paper will gradually come out from the paper exit on the top of the printing mechanism. Wait a moment for a little bit of paper to appear, then release the FEED button to stop the paper feed.
6. Pull the paper end passing through the slot on the cover of the printer and close the cover.

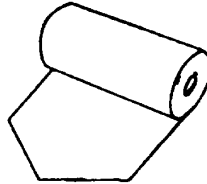


Figure 5. Cutting the Paper Roll.

OPERATION

Indicators and Key Button Operation

There are two indicators and two key buttons on the panel of the SF42 Printer. The "P" indicator is used for power indication and the "SEL" indicator is used for On/Off Line indication.

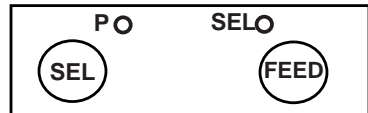


Figure 6. Indicators and Buttons.

One key button marked "SEL" is used to provide On/Off line selection. The FEED key button is used to advance the paper feed when pressed.

The P indicator lights up when the power is on. The SEL indicator lights up when the printer enters On-line mode. Operating the SEL and FEED key buttons can select three working modes such as Self-Test, On/Off Line and Paper Feed.

Self-Test Mode

To start the Self-Test:

Press the SEL button, then power on. The printer enters the Self-Test mode.

Self-Test Mode (Cont.)

The Self-Test checks the condition of the printer. If the printer prints out the Self-Test sample correctly, the printer is working normally. It does not indicate that the interface between the printer and the host is good. If the sample is not correct, the printer needs checking.

The Self-Test lists the model number of the printer, all ANK characters with the order of fonts then prints out interfacing type and Chinese Fonts. Chinese standard level 1 and Chinese Fonts library.

Printer will enter the On-Line state after it completes the Self-Test operation. Sometimes, the Self-Test is incorrect but the printer may be actually normal. Under that condition, please check if or not the power supply meets the specification of the printer.

On/Off Line Mode

When power is on or after the printer quits from Self-Test, the printer enters the On Line state. At the same time, the SEL indicator lights up. Click the SEL button to Off Line then the SEL indicator goes out. Click the SEL button again to return to ON Line. So the button is ON/off Line toggle. The printer does not receive the data from the host computer when Off Line.

Another function is that SEL button can halt the printing operation. You can click the SEL button at printing state. The printer prints out the last line and halts in the state of Off Line. Clicking the SEL button, the printer will continue to print.

Paper Feed Mode

When Off Line, clicking the FEED button feeds the paper out.

Setting the Serial Interface

(1) Setting the parameters of data communication. Skip to step (2) if you do not need to modify the parameters.

Setting Baud Rate

1. Hold the FEED button down and power on, to enter the serial communication settings.
2. Release the FEED button. The current Baud Rate will be printed.
3. Click the SEL button to select the Baud Rate. Each click will advance the setting which is printed as either: 1200, 2400, 4800 or 9600 bps.
4. After the Baud rate has been selected, click the FEED button to confirm the value. Follow with Parity settings.

Setting Parity

1. Click the SEL button to select Parity, each click will advance the setting which is printed as either: None, Odd, Even.
2. Click the FEED button to confirm the value of Parity.

Setting Data Length

1. Click the SEL button to select Data Length, each click will advance the setting which is printed as either: 8 bits or 7 bits.
 2. Click the FEED button to confirm the value of Data Length. Printer returns to Baud Rate setting again.
 3. Clicking the SEL button again can repeat all settings. Switching off the power will quit the parameter setting.
- (2) Printer sets the RTS line to MARK that means BUSY and meanwhile, sends the code X-OFF (13H) out if the space in the data buffer of the printer is less than or equal to 32 bytes. Printer sets the RTS line to SPACE that means READY and meanwhile, sends the code X-ON (11H) out if the buffer space is more than 32 bytes.
- (3) Host computer identifies the status of printer if it is in the READY or the BUSY according to X-ON/X-OFF or RTS/CTS protocol. The host is based on the status to send a Start or Stop transmitting string to the printer.

CARE AND MAINTENANCE

To keep the Printer operating properly, the housing should be kept clean and free from foreign material. The following maintenance procedures and precautions should be followed:

1. Do not dismantle the printer head,
2. Do not leave power on when not in use for a long period.
3. Switch off, if printer does not work normally.
4. Power supply must match the AC Adapter power requirements.
5. Do not lubricate the printer head.
6. Fluff and dust from paper are harmful to the printer head. Check and clear the head when replacing the paper roll.
7. When replacing the ribbon, do not press the cassette too hard, otherwise, the plastic wheel may be damaged.
8. Never use ribbon oil, it may damage the printer head.

SERVICE INFORMATION

If you cannot resolve problems with the printer, you will need to contact an authorized Ohaus Service Agent. For Service assistance in the United States, please call Ohaus Corporation toll-free at (800) 526-0659. An Ohaus Product Service Specialist will be available to help you.

SPECIFICATIONS

MODEL SF42 Impact Printer

<u>General Specifications:</u>	
Interface:	Serial (RS232 Compatible)
Printer Method:	Impact Dot Matrix (Inked Ribbon)
Character Format:	5 x 7 Dot Matrix
Character Dimension: (in/cm)	0.04 x 0.10/.11 x .26
Character Density:	42 Characters per line
Printing Speed:	40 lines per minute
Paper Width: (in/cm)	2.25/5.7
Power Adapter:	AC adapter (110/120, 220/240 Vac) 50/60Hz
Power:	9 V dc, 600mA, (center pin positive)
Operating Temp.	32°to 104F°/0°C to 40°C
Dimensions: (in/cm) (WxHxD)	4 x 3.7 x 7.3 / 10.4 x 9.6 x 18.6
Weight (lb/kg)	1.3 / 0.59 (without internal paper roll)

<u>Interface Specifications:</u>	
Connector:	25 Pin D type (Female)
Baud Rate:	Selectable (1200, 2400, 4800, 9600)
Data Bit:	7 or 8
Parity:	Even, odd or none
Stop Bit:	Auto select

PARTS INFORMATION

If you require replacement parts or would like to purchase accessories, please call Ohaus Corporation. An Ohaus Product Parts Specialist will be available to help you.

REPLACEMENT PARTS

<u>Description</u>	<u>OHAUS Part No.</u>
AC Adapter:	
120 V ac, 60Hz, Output, 9V/1A, USA (CUL)	12101501
230 V ac, 50Hz, Output, 9V/1A, Europe (CE or TUV/GS)	12101502
240 V ac, 50Hz, Output, 9V/1A, UK (CE or TUV/GS)	12101503
110 V ac, 50Hz, Output, 9V/1A, Japan (UL)	12101504
240 V ac, 50Hz, Output, 9V/1A, Australia (CE or TUV/GS)	12101505
Paper (5 pack):	12101511
Ribbon:	12101512

ACCESSORIES

Interface Cables: Contact Ohaus Customer Service or visit Ohaus web page at www.ohaus.com

Appendix A Noise Filter

For the reason that the EMC standard is required in many countries or districts in the world, the noise filter, for this requirement should be installed onto the cable that is used for connection of the parallel or serial interface of the SF42 printer. The cable must be prepared according to the following steps:

1. Select the shielded cable for the printer connection.
2. Bend the cable and make its shape into a ring as shown in Figure A-1.
3. Open the noise filter and clamp it onto the ring. At the same time, reserve the 2 cm long cable between the filter and the D-type plug which will be connected to the printer interface. See Figure A-1 for details.

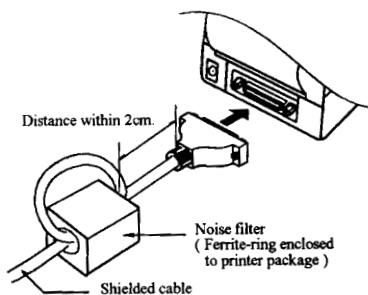


Figure A-1. Noise Filter Installation.

Appendix B Watch-dog Function

The Watch-dog circuit is already installed in the SF42 Printer. It effectively improves the anti-interference performance of the printer.

If the printer were interfered by ESD, BURST and RF sources, it would enter into an abnormal state. If the printer remains in the abnormal state exceeding the watch-dog timing, the printer would be restarted or reset automatically.

The result is the same as reset when power is on, i.e. the receiving buffer of the printer will be cleared and all the command parameters will be set to the default values. The printer enters in the normal operating mode.

LIMITED WARRANTY

Ohaus products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period Ohaus will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to Ohaus.

This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than Ohaus. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by Ohaus Corporation. Ohaus Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact Ohaus or your local Ohaus dealer for further details.