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Gilson 606
GSIOC to RS-232 Converter
User's Guide

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September 1992

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1 Introduction

Description

The Gilson 606 GSIOC to RS-232 Converter enables you to control RS-232 devices from Gilson Software as if they were connected along the Gilson Serial Input/Output Channel (GSIOC). The 606 enables you to send commands to and get information from non-Gilson devices via their RS-232 port.

Inspection

Unpack the 606 and its accessories carefully from the carton.

Cross-check the contents against the equipment checklist shown below to verify that all parts are included and are undamaged. Do this now, even if the 606 will not be used immediately. Many carriers must receive concealed damage claims within 7 days of delivery.

Please retain all packing material so the 606 may be shipped safely, if necessary.

The carton contains:

- wall transformer — 12 V DC, 500 mA (the transformer you receive is designed to accept the input voltage specified in your order)
- RS-232 cable
- GSIOC cable

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Customer service

Gilson Medical Electronics, Inc. and its worldwide network of authorized representatives provide customers with these types of assistance: sales, technical, applications, and instrument repair.

If you need assistance, please contact your regional Gilson representative or call the Gilson Customer Service Department, toll-free at 800-445-7661 or at 608-836-1551. To help us serve you quickly and efficiently, please refer to **before calling us...** on page 5-2.

Specifications

RS-232 connections

Two male 25-pin D-connectors that meet Electronic Industries Association (EIA) requirements for data terminal equipment (DTE). See *Appendix B* for pinout information.

GSIOC connection

Male 9-pin D-connector that meets EIA requirements for RS-422 and RS-485 signal levels. Communication protocol and connector pinout are defined in the *GSIOC Technical Manual* available from Gilson.

DC power

Supplied via 2.1 mm ID power plug — center contact is positive. Power requirements are +12 V DC at 500 mA.

dimensions

cm: 19.3 W x 12.7 D x 3.8 H
in: 7.6 W x 5 D x 1.5 H

weight

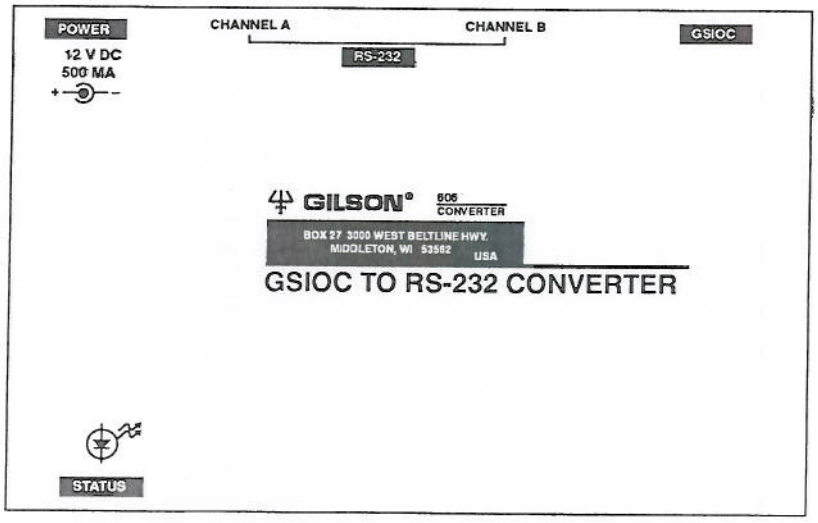
1.03 lb; 0.468 kg

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2 Installation

The 606 is pre-configured as a GSIOC to RS-232 interface. Follow these instructions to set up the 606.

Turn off and unplug all computers and instrument modules before making the connections described in this section.



606 Top View — Connector Locations

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Connecting an RS-232 cable

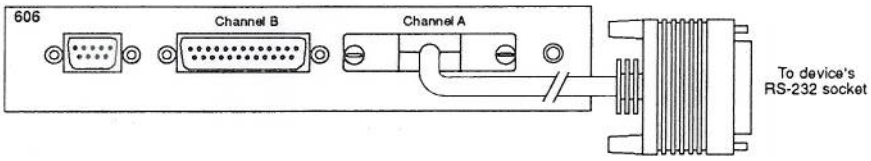
Locate the RS-232 cable provided with the 606 or RS-232 device. Use the cable to connect the 606 and the RS-232 device. The RS-232 cable supplied with the 606 has a female 25-pin D-connector at one end and a male 25-pin D-connector at the other.

Note: If the RS-232 port of your device is a 9-pin male connector, you need a 25-to-9 pin serial cable to make the connection. If this type of cable was not supplied with the RS-232 device, you'll need to purchase one from a computer store or make one. See **ensuring communication can occur**, below.

Attach the female end of the RS-232 cable to one of the 606's RS-232 ports (labeled Channel A and Channel B). Tighten the retaining screws.

Connect the male end of the cable to the RS-232 device being interfaced with the Gilson system.

If necessary, follow the same procedures to connect a second RS-232 device to the 606. An additional 25-to-25 pin RS-232 cable (Reference Number 36 08 31 21) can be purchased from Gilson.



ensuring communication can occur

The connectors for the 606's RS-232 ports follow the Electronics Industries Association (EIA) standard for data terminal equipment (DTE). Each connector sends data via pin 2 and receives data via pin 3. *Appendix B* contains pinout information for these connectors.

Each device being connected to the 606 should receive data via pin 2 and send data via pin 3 of its RS-232 connector. Check the documentation supplied with the device for its RS-232 pinout information.

If the RS-232 device does not receive and send data via pins 2 and 3, you must change the connector wiring, get a null modem adapter, or make a special cable.

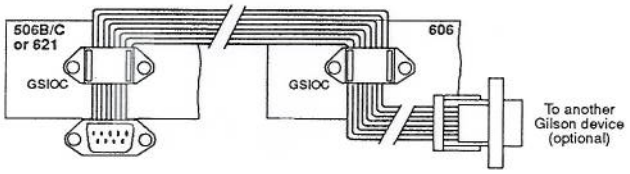
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Connecting the GSIOC cable

Use the GSIOC cable to connect the 606 along the GSIOC (Gilson Serial Input/Output Channel). Each GSIOC cable includes a male 9-pin connector and three female 9-pin connectors.

One of the female connectors is located 2" from the male connector. Plug that female connector into the 9-pin GSIOC port of a Gilson 506B/C System Interface Module or 621 Data Master. Attach another female connector to the GSIOC port of the 606.

Continue connecting any additional Gilson equipment along the GSIOC. If necessary, use multiple GSIOC cables to make connections. To link cables, attach the last female connector to the male connector of the next GSIOC cable.



Attaching the power connector

After you've made all the necessary connections, attach the power connector to the POWER input of the 606 and the transformer to a wall outlet. The 606 does not have a power switch. If you prefer to have a power switch, a switched power outlet strip is recommended.

The Status light indicates that power is being supplied to the 606.

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3 Operation

To operate the 606 and any RS-232 devices connected to it, you send commands to the 606 via the Gilson Serial Input/Output Channel (GSIOC). The GSIOC is an asynchronous serial communications interface. It incorporates a standard EIA RS-485 interface and allows devices to be controlled from a single controller (usually a computer).

From the controller, you:

- indicate the unit ID of the device to be controlled – the default unit ID of the 606 is 61
- issue commands to that device

To issue commands to the 606 via the GSIOC, you need the following:

IBM or compatible computer
Gilson 506B/C System Interface Module or 621 Data Master
Gilson HPLC System Controller Software **or** 706 GSIOC Driver and your program

This section describes the GSIOC commands that can be issued to the 606. It also contains two examples on how to control RS-232 devices via the 606 using GSIOC commands.

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GSIOC command list

Following are the commands that can be issued to the 606 via the GSIOC. The bold part of the command should be typed as shown. Replace the italicized part with the appropriate information.

Command	*Type*	*Description*
%	Immediate	Identifies the 606. Returns character string: '606Vx.y', where x and y represent the software version.
$	Immediate	Resets power to the 606. Returns '$'.
a	Immediate	Reads status of Channel A. Returns 'abcde,f,g' . You'll see 0 (false) or 1 (true) for 'abcde' and a value between 0 and 1536 for 'f,g': a - CTS (Clear to Send) status b - DSR (Data Set Ready) status c - CD (Carrier Detect) status d - DTR (Data Terminal Ready) status e - RTS (Request to Send) status f - Number of characters in Tx (Transmit) buffer g - Number of characters in Rx (Receive) buffer
a*abcde*	Buffered	Sets status for Channel A. For *abcde*, indicate 0 (false) or 1 (true). See immediate **a command**, above, for a description of the parameters *abcde*.
A	Immediate	Reads FIFO (first in, first out) data for Channel A.
A*string*	Buffered	Sends an ASCII character string to the device connected to Channel A. For *string*, refer to the documentation for the RS-232 device. That documentation should identify the commands that can be sent to the device via its RS-232 port. **Note:** If the command being sent requires a non-printing character, such as a key press, use the hexadecimal number for the non-printing character and place that number within brackets. For example, using [0D] in a command string indicates a carriage return. The ASCII table in ***Appendix C*** identifies the hexadecimal numbers associated with common non-printing characters.
b	Immediate	Reads status of Channel B. Returns 'abcde,f,g'. See immediate **a command**, above, for a description of 'abcde,f,g'.
b*abcde*	Buffered	Sets status for Channel B. For *abcde*, indicate 0 (false) or 1 (true). See immediate **a command**, above, for a description of the parameters *abcde*.

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B	Immediate	Reads FIFO (first in, first out) data for Channel B.
B*string*	Buffered	Sends a character string to the device connected to Channel B. For *string*, refer to the documentation for the RS-232 device. That documentation should identify the commands that can be sent to the device via its RS-232 port. Note: If the command being sent requires a non-printing character, such as a key press, use the hexadecimal number for the non-printing character and place that number within brackets. For example, using [0D] in a command string indicates a carriage return. The ASCII table in ***Appendix C*** identifies the hexadecimal numbers associated with common non-printing characters.
E	Immediate	Reads communication error status for Channel A. Returns 0 (false) or 1 (true) for 'abc': a - framing b - parity c - overrun
F	Immediate	Reads communication error status for Channel B. Returns 'abc'. See immediate **E command**, above, for a description of 'abc'.
M	Immediate	Reads communication mode for Channel A. Returns 'a,b,c,d,e': a - baud rate: 75, 110, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, or 38400 b - parity mode: E (even), O (odd), N (none), M (1), or S (0) c - bits per character: 5, 6, 7, or 8 d - stop bit: 1 or 2 e - handshake: H (hardware), S (software), B (both), or N (neither)
M*a,b,c,d,e*	Buffered	Sets communication mode for Channel A. See immediate **M command** for a description of what to indicate for *a,b,c,d,e*. Example command: M9600,E,8,1,H
N	Immediate	Reads communication mode for Channel B. Returns 'a,b,c,d,e'. See immediate **M command** for a description of 'a,b,c,d,e'.
N*a,b,c,d,e*	Buffered	Sets communication mode for Channel B. See immediate **M command** for a description of what to indicate for *a,b,c,d,e*. Example command: N9600,E,8,1,H

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Example 1: Controlling RS-232 detector using Gilson software

This example shows how a non-Gilson detector can be interfaced with a Gilson HPLC system. A method was set up in the Gilson 715 HPLC System Controller Software that changed the wavelength and autozeroed the detector during a run.

Note: The analog output from the detector must be connected to the data unit of the Gilson HPLC system. Do not collect data via the RS-232 channel.

configuration

The HPLC system included:

IBM-compatible computer with Gilson 715 HPLC System Controller Software installed
Gilson 506C System Interface Module
Gilson 606 GSIOC to RS-232 Converter
Spectroflow 783 Absorbance Detector (Kratos Division, ABI Analytical, Foster City, CA)

The detector's RS-232 port was connected to Channel A of the 606. Because the RS-232 pinout from the detector did not correspond to those required by the 606, a special connector was needed. It provided the following connections between the RS-232 ports of the 606 and detector.

Detector RS-232		*606 RS-232*
Chassis GND (pin 1)	---------→	Chassis GND (pin 1)
RS-232 In (pin 3)	---------→	TxD (pin 2)
RS-232 Out (pin 4)	---------→	RxD (pin 3)
Common (pin 6)	---------→	GND (pin 7)

GSIOC commands

The GSIOC commands listed on the next page were set up in the Instrument Control Table (Edit menu/Gilson Instruments command) of the 715 Software. See pages 3-2 and 3-3 for a listing of the 606's GSIOC commands. Parameters required for the buffered **A command** and **M command** were obtained from the documentation for the detector.

Because the 606 is not listed in the Instrument list box of the Instrument Control Table, select Other GSIOC device in that list box and GSIOC command in the Command list box. The default unit ID for the 606 is 61.

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Command	*Type*	*Description*
$	Immediate	Resets 606.
M9600,N,8,1,N	Buffered	Sets mode for Channel A: 9600 baud, no parity, 8 bits per character, 1 stop bit, and no handshake.
AWL190[0D]	Buffered	Changes wavelength to 190 nm. **Note**: 0D is the hexadecimal number for a carriage return. If a command requires a non-printing character, such as a key press, you must use a hexadecimal number to identify the non-printing character. And, you must place the hexadecimal number within brackets. See ***Appendix C*** for the hexadecimal numbers for non-printing characters.
AWL700[0D]	Buffered	Changes wavelength to 700 nm.
AAZ[0D]	Buffered	Autozeroes the detector.

method listing

Following is the example method set up in the 715 Software to control the detector. The commands being sent to the detector via the 606 are listed under Gilson Instrument Events and under Chronological List of Events (shown on next page).

```
Listing of Method: C:\GILSON\EXAMPLE.USR\606_EX1.MTI


-Control Parameters-
    Run Time: 4.00 min
      0.00 min  Loop Begin

    Link Method  : none
    Low Pressure : none
    High Pressure: none
    General:       none
    Analysis Methods: none
    Wait Timeout : 0.00

    Data Begin: 0.10 min
    Data End: 4.00 min

-Data Channels-
        Save  View    mV FS  %Offset  Units FS  Description
    A -    *     *       10        10
    B -                  10        10
    C -                  10        10
    D -                  10        10
    Chart speed is 40 mm/min
    Do not print the strip chart

-Mobile Phase Events-

-Contact Events-
```

(continued on next page)

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```
-Gilson Instrument Events-
      0.05 min  Imm_Cmd to unit 61: $ 'Reset 606
      0.07 min  Buf_Cmd to unit 61: M9600,N,8,1,N 'Set mode for channel A
      0.10 min  231        Wait for Injection
      0.20 min  Buf_Cmd to unit 61: AWL190[0D] 'Set wavelength=190
      0.40 min  Buf_Cmd to unit 61: AAZ[0D] 'Autozero detector
      0.50 min  Buf_Cmd to unit 61: AWL700[0D] 'Set wavelength=700
      0.70 min  Buf_Cmd to unit 61: AAZ[0D] 'Autozero detector

-Hardware Configuration-
    Number of Pumps: 1
    Contact Unit ID: 63
    Data Unit ID: 63

            ID  Headsize  Refill  Comp.
    Pump A   1      5       125     47
    Display system pressure in psi
    Low pressure limit  : 0 psi
    High pressure limit : 3000 psi

-Chronological List of Events-
      0.00 min  Loop Begin
      0.05 min  Imm_Cmd to unit 61: $ 'Reset 606
      0.07 min  Buf_Cmd to unit 61: M9600,N,8,1,N 'Set mode for channel A
      0.10 min  231        Wait for Injection
                Data Collection Begin
      0.20 min  Buf_Cmd to unit 61: AWL190[0D] 'Set wavelength=190
      0.40 min  Buf_Cmd to unit 61: AAZ[0D] 'Autozero detector
      0.50 min  Buf_Cmd to unit 61: AWL700[0D] 'Set wavelength=700
      0.70 min  Buf_Cmd to unit 61: AAZ[0D] 'Autozero detector

-Analysis Parameters-
    Peak Width: 0.20 min
    Peak Sensitivity: 2.0 %
    Analysis Channel:  A

-Analysis Report-
    Save Reports
    Save Report Summary
    Area percent report
    Report unnamed peaks
      1 Injections


-Chromatogram Scaling-
    Do not print chromatogram
    Plot Analysis Channel (A)

-Rubber Stamp-

-Analysis Peak Table-

-Analysis Events-
```


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Example 2: Placing information from an RS-232 device into an HPLC report

This example shows how a balance can be interfaced with a Gilson HPLC system. A method was set up in the Gilson 715 HPLC System Controller Software that read the balance's display during a run and placed that information into the report for an injected sample.

configuration

The HPLC system included:

IBM-compatible computer with Gilson 715 HPLC System Controller Software installed
Gilson 506C System Interface Module
Gilson 606 GSIOC to RS-232 Converter
Gilson 117 Detector
Gilson 305 Pump
Sartorius Model BA310P Balance (Sartorius Corporation, Long Island, NY)

Because the RS-232 pinout from the balance did not correspond to those required by the 606, a null modem was needed. It provided the following connections between the 606 and balance.

Balance RS-232		*606 RS-232*
Chassis GND (pin 1)	---------→	Chassis GND (pin 1)
TxD (pin 2)	---------→	RxD (pin 3)
RxD (pin 3)	---------→	TxD (pin 2)
DTR (pin 4)	---------→	DSR (pin 3)
	---------→	CTS (pin 5)
CTS (pin 5)	---------→	RTS (pin 4)
GND (pin 7)	---------→	GND (pin 7)

GSIOC commands

The GSIOC commands on the next page were set up in the Instrument Control Table (Edit menu/Gilson Instruments command) of the 715 Software. See pages 3-2 and 3-3 for a listing of the 606's GSIOC commands. Parameters required for the buffered **A command** and **M command** listed below were obtained from the documentation for the balance.

Because the 606 is not listed in the Instrument list box of the Instrument Control Table, select Other GSIOC device in that list box and GSIOC command in the Command list box. The default unit ID for the 606 is 61.

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Command	*Type*	*Description*
$	Immediate	Resets 606.
M1200,O,7,1,H	Buffered	Sets mode for Channel A: 1200 baud, odd parity, 7 bits per character, 1 stop bit, and hardware handshake.
A[1B]P[0D][0A]	Buffered	Sends print command to balance through Channel A. The balance will return the string shown on its display after it receives this command. **Note:** 1B is the hexadecimal number for escape, 0D for carriage return, and 0A for line feed. If a command requires a non-printing character, such as a key press, you must use a hexadecimal number to identify the non-printing character. And, you must place the hexadecimal number within brackets. See *Appendix C* for the hexadecimal numbers for non-printing characters.
A>1	Immediate	Reads response on Channel A and places it into HPLC report beneath the sample ID.

method listing

Following is the example method used to read the balance's display into an HPLC report. The commands being sent to the balance via the 606 are listed under Gilson Instrument Events and under Chronological List of Events (shown on next page).

```
Listing of Method: C:\GILSON\EXAMPLE.USR\606_EX2.MTI


-Control Parameters-
    Run Time: 4.00 min
      0.00 min  Loop Begin
      4.00 min  Loop back to      0.00 min      1 times

    Link Method  : none
    Low Pressure : none
    High Pressure: none
    General:       none
    Analysis Methods: none
    Wait Timeout : 0.00

    Data Begin: 0.10 min
    Data End: 4.00 min

-Data Channels-
        Save  View   mV FS  %Offset  Units FS  Description
    A -    *     *       10        10
    B -                  10        10
    C -                  10        10
    D -                  10        10
    Chart speed is 40 mm/min
    Do not print the strip chart
```

(continued on next page)

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```
-Mobile Phase Events-
      0.00 min  Flow = 1.000
      0.50 min

-Contact Events-

-Gilson Instrument Events-
      0.05 min  Imm_Cmd to unit 61: $ 'Reset 606
      0.07 min  Buf_Cmd to unit 61: M1200,0,7,1,H 'Set mode for channel A
      0.10 min  231        Wait for Injection
      0.13 min  Buf_Cmd to unit 61: A[1B]P[0D][0A] 'Send print command
      0.15 min  Imm_Cmd to unit 61: A>1 'Put Ch. A information in report

-Hardware Configuration-
    Number of Pumps: 1
    Contact Unit ID: 63
    Data Unit ID: 63

            ID  Headsize  Refill  Comp.
    Pump A   1      5       125     47
    Display system pressure in psi
    Low pressure limit  : 0 psi
    High pressure limit : 3000 psi

-Chronological List of Events-
      0.00 min  Loop Begin
      0.00 min  Flow = 1.000
      0.05 min  Imm_Cmd to unit 61: $ 'Reset 606
      0.07 min  Buf_Cmd to unit 61: M1200,0,7,1,H 'Set mode for channel A
      0.10 min  231        Wait for Injection
                Data Collection Begin
      0.13 min  Buf_Cmd to unit 61: A[1B]P[0D][0A] 'Send print command
      0.15 min  Imm_Cmd to unit 61: A>1 'Put Ch. A information in report
      0.50 min
      4.00 min  Loop back to     0.00 min     1 times

-Analysis Parameters-
    Peak Width: 0.20 min
    Peak Sensitivity: 2.0 %
    Analysis Channel:  A

-Analysis Report-
    Save Reports
    Save Report Summary
    Area percent report
    Report unnamed peaks
      1 Injections


-Chromatogram Scaling-
    Do not print chromatogram
    Plot Analysis Channel (A)

-Rubber Stamp-

-Analysis Peak Table-

-Analysis Events-
```


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report listing

As you can see in the following report listing, the balance information was printed beneath the sample ID.

[0D] and [0A] at the end of the balance information identify the hexadecimal numbers for carriage return and line feed.

```
Control Method:  C:\GILSON\EXAMPLE.USR\606_EX2.MTI
Analysis Method: C:\GILSON\EXAMPLE.USR\606_EX2.MTI
Data:   C:\GILSON\EXAMPLE.USR\606_EX2.001\DAT001.DTI
Report: C:\GILSON\EXAMPLE.USR\606_EX2.001\606_EX2.001

Inject time: Wed Aug 26 1992 13:26:04
Reanalysis on: Wed Aug 26 1992 13:43:45

Analysis Channel: A - Channel A
Sample Number : 1

--------> + 2.777 g [0D][0A]

Loop: 1/1
Peak width: 0.20 min
Peak sensitivity: 2.0%
Data Collection time: 3.90 min

--Area percent report--
Peak Name              RT       Area      Area%
                    0.168        688      0.482
                    1.987        509      0.356
                    2.070      10545      7.389
                    2.302      33054     23.161
                    2.490      44013     30.841
                    3.006      28266     19.807
                    3.314      25634     17.963
  7 Peaks integrated
```


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4 Maintenance

The 606 should not require maintenance. The best precaution for continued operation is to avoid spilling liquid on the connectors.

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5 Troubleshooting

When using the 606 with Gilson-supplied accessories, computers and application software, troubleshooting is simple. Consult the documentation supplied with your Gilson System Controller Software or device to review connections to other system components. Most problems are due to improper connections and installation.

Troubleshooting chart

Problem	*Possible Cause/Remedy*
status light not on	Power is not being sent to the 606, or the processor may be damaged. Reset the 606 by removing and replacing the power connector. If the light remains off, contact Gilson or your local Gilson representative for repair information.
606 not responding to commands	Check GSIOC cable connection. See *Section 2*. Verify that the correct GSIOC command is being sent. Refer to *Section 3* for the GSIOC commands for the 606. Check unit ID and baud rate switches as described in *Appendix A*.
RS-232 device not responding to commands but 606 is	Check RS-232 cable connection. See *Section 2*. Verify that the correct GSIOC command is being sent. Refer to *Section 3* for the GSIOC commands that can be sent to the RS-232 device via the 606. Refer to the documentation for the RS-232 device for a listing of its RS-232 commands. Check the pinout connections between the RS-232 ports of the 606 and RS-232 device. The 606 sends data via pin 2 and receives data via pin 3 of its RS-232 connectors. The RS-232 device should receive data via pin 2 and send data via pin 3 of its RS-232 connector. *Appendix B* contains pinout information for the 606. Refer to the documentation supplied with the RS-232 device for its pinout information. If the RS-232 device does not receive and send data via pins 2 and 3, change the connector wiring, get a null modem adapter, or make a special cable to connect the 606 and RS-232 device.

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Repair and return policies

before calling us...

Gilson Customer Service personnel will be able to serve you more efficiently if you have the following information:

- the serial number and model number of the equipment involved
- the installation procedure you used
- list of concise symptoms
- list of operating procedures and conditions you were using when the problem arose
- list of other devices connected to the 606 and a description of those connections
- list of other electrical connections in the room

warranty repair

Units covered under warranty will be repaired and returned to you at no charge. If you have any questions about applicability, please contact Gilson or your authorized representative.

non-warranty repair

For out-of-warranty repairs, contact your local Gilson representative or the Gilson factory. A Customer Service representative will discuss service options with you and can assist in making arrangements to return the equipment, if necessary.

rebuilt exchange

For some units, rebuilt exchange components are available. Contact Gilson for details.

return procedure

Before returning any Gilson equipment, contact the Gilson factory to obtain a Return Goods Authorization (RGA) Number. Outside the United States, contact your Gilson representative for return procedures.

To return a piece of equipment to the Gilson factory:

- Carefully pack the unit to prevent damage in transit. Check with Gilson regarding proper method of shipment. No responsibility is assumed by Gilson for damage caused by improperly packaged instruments. Indicate the RGA Number on the carton or on the packing slip.

- Always insure for the replacement value of the unit.

- Include a description of symptoms, your name, return address, phone number and purchase order to cover repair costs, return and shipping charges, if your institution requires it. Ship to:

  Gilson Medical Electronics, Inc.
  Attention: Customer Service
  3000 W. Beltline Highway
  Middleton, WI 53562

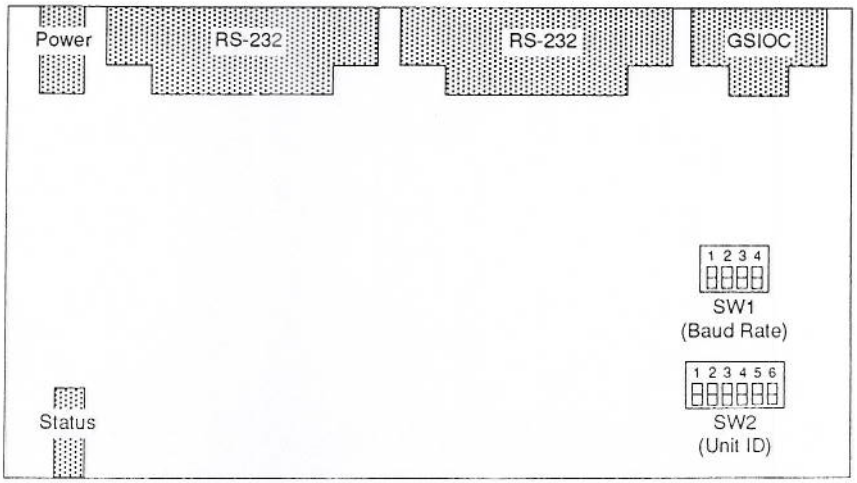
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Appendix A

Switch Settings

This section provides settings for the two printed circuit board switches that configure the baud rate and unit ID for the 606. Access the printed circuit board by removing the top cover of the 606. The locations of the two switches are shown in the diagram below.

Note: When you remove the top cover of the 606, turn it over. You'll see a label that details the same information given in this appendix.



Location of Printed Circuit Boards

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Baud rate selection (for GSIOC)

Baud rate	SW1 Switch Position			
	1	2	3	4
300	O	O	O	X
600	C	O	O	X
1200	O	C	O	X
2400	C	C	O	X
4800	O	O	C	X
9600	C	O	C	X
19200	O	C	C	X
External*	C	C	C	X

O = Open C = Closed X = Not Used
* = Factory default

Unit ID selection

Unit ID	SW2 Switch Position					
	1	2	3	4	5	6
0	O	O	O	O	O	O
1	C	O	O	O	O	O
2	O	C	O	O	O	O
3	C	C	O	O	O	O
4	O	O	C	O	O	O
5	C	O	C	O	O	O
:						
14	O	C	C	C	O	O
15	C	C	C	C	O	O
:						
31	C	C	C	C	C	O
32	O	O	O	O	O	C
:						
61*	O	O	C	C	C	C
62	O	C	C	C	C	C
63	C	C	C	C	C	C

O = Open C = Closed * = Factory default

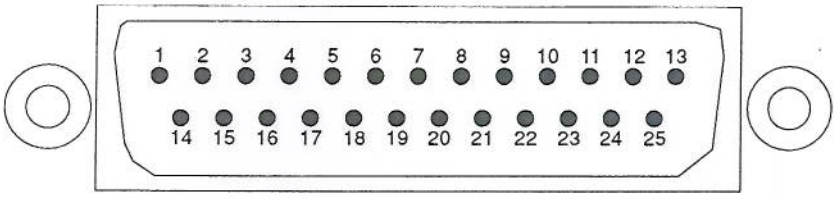
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Appendix B

RS-232 Connector Pinout

Following is pinout information for the 606's two RS-232 connectors. These are male 25-pin D-connectors that meet Electronic Industries Association (EIA) requirements for data terminal equipment (DTE).

Pin	*Function*	*Input/Output*
1	Chassis GND (Ground)	--
2	TxD (Transmit Character)	output
3	RxD (Receive Character)	input
4	RTS (Request to Send)	output
5	CTS (Clear to Send)	input
6	DSR (Data Set Ready)	input
7	GND (Ground)	--
8	CD (Carrier Detect)	input
20	DTR (Data Terminal Ready)	output



RS-232 Connector

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Appendix C
ASCII Table

Decimal Number	Hexadecimal Number	Character	Decimal Number	Hexadecimal Number	Character	Decimal Number	Hexadecimal Number	Character
0	00	^@ NUL	43	2B	+	86	56	V
1	01	^A SOH	44	2C	,	87	57	W
2	02	^B STX	45	2D	-	88	58	X
3	03	^C ETX	46	2E	.	89	59	Y
4	04	^D EOT	47	2F	/	90	5A	Z
5	05	^E ENQ	48	30	0	91	5B	[
6	06	^F ACK	49	31	1	92	5C	\
7	07	^G BEL	50	32	2	93	5D	]
8	08	^H BS	51	33	3	94	5E	^
9	09	^I HT	52	34	4	95	5F	_
10	0A	^J LF	53	35	5	96	60	`
11	0B	^K VT	54	36	6	97	61	a
12	0C	^L FF	55	37	7	98	62	b
13	0D	^M CR	56	38	8	99	63	c
14	0E	^N SO	57	39	9	100	64	d
15	0F	^O SI	58	3A	:	101	65	e
16	10	^P DLE	59	3B	;	102	66	f
17	11	^Q DC1	60	3C	<	103	67	g
18	12	^R DC2	61	3D	=	104	68	h
19	13	^S DC3	62	3E	>	105	69	i
20	14	^T DC4	63	3F	?	106	6A	j
21	15	^U NAK	64	40	@	107	6B	k
22	16	^V SYN	65	41	A	108	6C	l
23	17	^W ETB	66	42	B	109	6D	m
24	18	^X CAN	67	43	C	110	6E	n
25	19	^Y EM	68	44	D	111	6F	o
26	1A	^Z SUB	69	45	E	112	70	p
27	1B	^[ESC	70	46	F	113	71	q
28	1C	^\ FS	71	47	G	114	72	r
29	1D	^] GS	72	48	H	115	73	s
30	1E	^^ RS	73	49	I	116	74	t
31	1F	^_ US	74	4A	J	117	75	u
32	20	SPC	75	4B	K	118	76	v
33	21	!	76	4C	L	119	77	w
34	22	"	77	4D	M	120	78	x
35	23	#	78	4E	N	121	79	y
36	24	$	79	4F	O	122	7A	z
37	25	%	80	50	P	123	7B	{
38	26	&	81	51	Q	124	7C	|
39	27	'	82	52	R	125	7D	}
40	28	(	83	53	S	126	7E	~
41	29	)	84	54	T	127	7F	DEL
42	2A	*	85	55	U			

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