

**CHANGE/ERRATA INFORMATION**

**ISSUE NO: 2      1/92**

This change/errata contains information necessary to ensure the accuracy of the following manual:

**MANUAL**

**Title:            Helios 1 System Manual**  
**Print Date:      January 1988**  
**Rev.- Date:     1, 8/88**

**C/E PAGE EFFECTIVITY**

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**ERRATA #1**

Add the following safety information prior to Section 1.

**OPERATOR SAFETY SUMMARY**

**SAFETY TERMS IN THIS MANUAL**

This instrument has been designed and tested in accordance with IEC Publication 348, Safety Requirements for Electronic Measuring Apparatus. This Operator Manual contains information, warnings, and cautions that must be followed to ensure safe operation and to maintain the instrument in a safe condition.

**WARNING** statements identify conditions or practices that could result in personal injury or loss of life.

**CAUTION** statements identify conditions or practices that could result in damage to equipment.

**SYMBOLS MARKED ON EQUIPMENT**



Attention -- refer to the manual. This symbol indicates that information about usage of a feature is contained in the manual. Refer to Section 3 of the System Manual for information about the following items on the Computer Interface Module (rear panel):

- o Alarm Annunciator Connector (-201 Scan/Alarm option)
- o Communication Parameter Selection Switches

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### POWER SOURCE

The instrument is intended to operate from a power source that will not apply more than 264V ac rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

### LINE VOLTAGE

Before plugging in the instrument, verify that line voltage matches the voltage setting indicated on the instrument rear panel.

### GROUNDING THE INSTRUMENT

The instrument is a Safety Class I (grounded enclosure) instrument as defined in IEC 348. The enclosure must be grounded through the grounding conductor of the power cord.

To avoid electrical shock, plug the power cord into a properly wired earth grounded receptacle before connecting anything else to any of the instrument connectors. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

### USE THE PROPER POWER CORD

Use only the power cord and connector appropriate for the voltage and plug configuration in your country.

Use only a power cord that is in good condition.

Refer cord and connector changes to qualified service personnel.

**DO NOT OPERATE IN EXPLOSIVE ATMOSPHERES**

To avoid explosion, do not operate the instrument in an atmosphere of explosive gas.

**DISCONNECT POWER WHEN INSTALLING OR REMOVING OPTION CARDS**

Disconnect line cord before installing or removing an option card. Lethal voltages may be present within the Front End and on some option cards.

**DO NOT REMOVE COVER**

To avoid personal injury or death, do not remove the instrument top or bottom cover. Do not operate the instrument without the cover properly installed. Lethal voltages may be present within the Front End and on some option cards. Access procedures and the warnings for such procedures are contained in the Service Manual. Service procedures are for qualified service personnel only.

**DO NOT ATTEMPT TO OPERATE IF PROTECTION MAY BE IMPAIRED**

If the instrument appears damaged or operates abnormally, protection may be impaired. Do not attempt to operate it. When in doubt, have the instrument serviced.

**DO NOT SERVICE UNLESS QUALIFIED TO DO SO**

Do not perform internal service or adjustment of this product unless you are qualified to do so.

**USE CARE WHEN SERVICING WITH POWER ON**

High voltages exist at several points inside the instrument. To avoid personal injury, do not touch exposed connections and components while power is on.

Disconnect power before removing protective panels, soldering, or replacing components.

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OPERATING SAFEGUARDS

WARNING

It is easy to implement a control system using Helios-I or Helios Plus with a PC and appropriate software. It is also important to design safety considerations into such a system.

In particular, any control system based on a personal computer (including a system built with Helios-I or Helios Plus) is susceptible to sudden interruption. If sudden interruption could cause a safety hazard, it is your responsibility to build into the system separate hardware shutdown devices that will return the system to a safe state.

If a loss of control in your application does not pose a safety problem, these considerations may not be important. However, you should consider the issue early in the design of your system and make allowances for safety devices as appropriate.

ERRATA #2

On page 2-27, add the following under Terminals...

Maximum Wire Size.....14 AWG

**ERRATA #3**

On page 8-12,

CHANGE: 47            SQR less than 0  
TO: 47                SQR less than zero

**ERRATA #4**

On page 3B-9, in the last paragraph, change both occurrences,

FROM: Table 3B-1  
TO: Table 3B-2

Add the following after the last bulleted item.

NOTE

If the 2281A Extender Chassis is not located within 2 meters of the Front End, a -431 power supply will be required.

On page 3B-10, replace Table 3B-1 Maximum Power Consumption, with the following:

Table 3B-2. Typical Power Consumption Serial Link Devices:

-161 High Performance A/D Converter	2.3W
Additional power consumption for each -161:	
-162 Thermocouple/DC Volts Scanner:	
First - 162	0.5W
Each additional - 162	0.2W
-163 RTD/Resistance Scanner:	
First - 163	1.1W
Each additional - 163	0.5W
-164 Transducer Excitation Module	3.5W
-167 Counter/Totalizer Assembly	4.3W
-168 Digital I/O Assembly	1.5W
-170 Analog Output	4.1W

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EXAMPLE 1

FRONT END		2281A EXTENDER CHASSIS	
Option	Watts	Option	Watts
-161	2.3	-170	4.1
-162	0.5	-170	4.1
-164	3.5	-168	1.5
-161	2.3	-168	1.5
-162	0.5	-168	1.5
-164	3.5	-168	1.5

Total power requirement = 26.8 watts. A -431 is needed.

On page 3B-11, replace EXAMPLE 2 with the following:

EXAMPLE 2

FRONT END		2281A EXTENDER CHASSIS	
Option	Watts	Option	Watts
-168	1.5	-161	2.3
-167	4.3	-162	0.5
-161	2.3	-164	3.5
-162	0.5	-	-
-162	0.2	-	-
-163	1.1	-	-

Total power consumption = 16.2 watts. A -431 is not required if the Extender Chassis is within 2 meters of the Front End.

On page 3B-10, in RULE 1, change the following:

FROM: 3B-1  
TO: 3B-2

**ERRATA #5**

On pages 3B-118 and 3B-122, Figure 179-1 and Table 179-1,

CHANGE: IBUSY	Invert BUSY	Output
TO: IBUSY	Invert BUSY	Input
CHANGE: IA1	Invert Acknowledge 1	Output
TO: IA1	Invert Acknowledge 1	Input
CHANGE: IA2	Invert Acknowledge 2	Output
TO: IA2	Invert Acknowledge 2	Input

**ERRATA #6**

On page 3B-123, add the following to Figure 179-3.

- o Load Pulse width, 12.5 usec, minimum
- o Load Pulse latches on the leading edge.
- o Inverted Load Pulses and Acknowledge Outputs also available.

NOTE: Tie Load 3 to Busy for automatic loading for applications that do not use handshake lines.