HIOKI

INSTRUCTION MANUAL

2343-20

RS LINK MODULE

HIOKI E. E. CORPORATION

Contents

Introduction

Thank you for purchasing the HIOKI “Model 2343-20 RS LINK MODULE.” To obtain maximum performance from the instrument, please read this manual first, and keep it handy for future reference.

Inspection

When you receive the instrument, inspect it carefully to ensure that no damage occurred during shipping. In particular, check the panel connectors. If damage is evident, or if it fails to operate according to the specifications, contact your dealer or Hioki representative.

Accessories

Instruction manual 1

Options

9637 RS-232C CABLE 1

Safety Notes

⚠DANGER This instrument is designed to comply with IEC 61010 Safety Standards, and has been thoroughly tested for safety prior to shipment. However, mishandling during use could result in injury or death, as well as damage to the instrument. Be certain that you understand the instructions and precautions in the manual before use. We disclaim any responsibility for accidents or injuries not resulting directly from instrument defects.

This manual contains information and warnings essential for safe operation of the instrument and for maintaining it in safe operating condition. Before using it, be sure to carefully read the following safety precautions.

Safety Symbols

In the manual, the ⚠ symbol indicates particularly important information that the user should read before using the instrument.

The ⚠ symbol printed on the instrument indicates that the user should refer to a corresponding topic in the manual (marked with the ⚠ symbol) before using the relevant function.

⎓ Indicates DC (Direct Current).

The following symbols in this manual indicate the relative importance of cautions and warnings.

DANGER	Indicates that incorrect operation presents an extreme hazard that could result in serious injury or death to the user.
WARNING	Indicates that incorrect operation presents a significant hazard that could result in serious injury or death to the user.
CAUTION	Indicates that incorrect operation presents a possibility of injury to the user or damage to the instrument.
NOTE	Indicates advisory items related to performance or correct operation of the instrument.

Other Symbols

	Indicates the prohibited action.
❖	Indicates the reference.

Notes on Use

Follow these precautions to ensure safe operation and to obtain the full benefits of the various functions.

⚠CAUTION

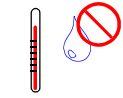
Do not allow the instrument to get wet.

Corrosive or combustible gases

Electromagnetic radiation or highly electrically charged object

- **Operation and Installation environment.**
  This instrument should be installed and operated indoors only, between 0 and 50°C (32 to 122°F) and 80% RH or less.
- **Do not allow the instrument to get wet, and do not take measurements with wet hands.**
  The instrument may be damaged.
- **Do not use the instrument where it may be exposed to corrosive or combustible gases.**
  The instrument may be damaged.
- **Do not use the instrument near a source of strong electromagnetic radiation, or near a highly electrically charged object.**
  These may cause a malfunction.
- **This instrument is not designed to be entirely water- or dust-proof.**
  Do not use it in an especially dusty environment, nor where it might be splashed with liquid. This may cause damage.
  When the module is used in a dusty environment, place it in a dustproof case and take measures to ensure heat dissipation.

⚠CAUTION



Temperature or humidity

Dust

Direct sunlight

- **Do not store or use the instrument where it could be exposed to direct sunlight, high temperature or humidity, or condensation.**
  Under such conditions, the instrument may be damaged and insulation may deteriorate so that it no longer meets specifications.

- **To avoid damage to the instrument, protect it from physical shock when transporting and handling.**
  Be especially careful to avoid physical shock from dropping.

- **Do not obstruct the ventilation holes.**
  Ventilation holes for heat radiation are provided on the top and rear panels of the instrument. Leave sufficient space around the ventilation holes and install the instrument with the holes unobstructed. Installation of the instrument with the ventilation holes obstructed may cause a malfunction or fire.

- **When using the instrument in the case, drill ventilation holes.**
  Drill ventilation holes or install a ventilation fan to prevent heat buildup.

⚠WARNING

- A qualified electrician shall perform the wiring to prevent electric shock.
- Avoid live-line electrical work to prevent electric shock and accidents due to short-circuiting.
- When tightening the screws, confirm that all screws are securely tightened. A loose screw may result in module errors, fire, or electric shock.
- Tighten the screws within the specified torque. Excessive torque may damage the terminals. Inadequate torque may result in module errors, fire, or electric shock.
- Ensure that the power supply module and input are OFF until all wiring work is finished. This will prevent module trouble and electric shock.
- Ensure that the power supply module and input are OFF when connecting or disconnecting the module to the system. This will prevent electric shock, errors, and malfunction.
- Avoid using an unused terminal for relaying or any other purpose to prevent electric shock, errors, and malfunction.

⚠CAUTION

- Connect the module to a power source that matches the rating in order to prevent fire.
- Ensure that the power supply, input, and output are correctly wired according to the wiring diagram. (See the chapter on "Preparations" in the instructions manual for each module.) This will prevent fire, malfunction, and errors.
- Use cables of the proper sizes for the rated current. This will prevent entire system errors and fire resulting from broken wire.
- If power supply noise poses a problem, use of a noise filter is recommended.
- When the power and signal lines may be subject to a lightning-induced surge, install a lightning arrester between another instrument or module connected to this module and line to protect the system.
- Avoid stepping on or pinching cables, which could damage the cable insulation.
- Keep the cables well away from heat sources, as bare conductors could be exposed if the insulation melts.

Preliminary Checks

- Before using the instrument the first time, verify that it operates normally to ensure that the no damage occurred during storage or shipping. If you find any damage, contact your dealer or Hioki representative.
- Before using the instrument, make sure that the insulation on the cables is undamaged and that no bare conductors are improperly exposed. Using the product in such conditions could cause an electric shock, so contact your dealer or Hioki representative for repair.

Overview Chapter 1

1.1 Product Overview

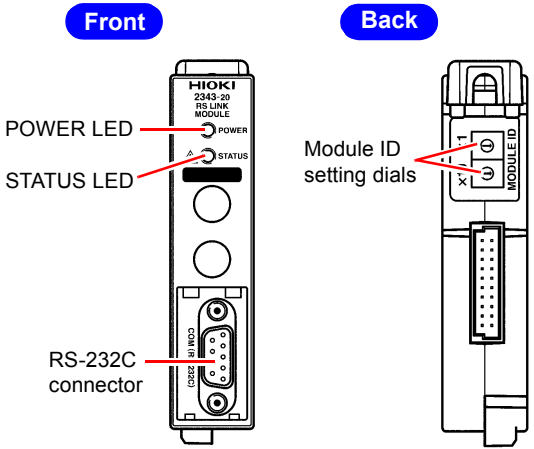
The 2343-20 is a measurement module for the Hioki "Smart Site" (remote measurement system). The module transmits commands to the device connected to the RS-232C terminal at regular intervals and stores the returned values from the device in memory.
It is used with a power supply module, a communications module, and a module base.

Standard connectable RS-232C device	3331, 3332
Number of connectable devices	1 unit

1.2 Major Features

- The recording interval can be set between 1 second and 60 minutes.
- Devices with RS-232C terminals can be connected to this module and incorporated into the Hioki remote measurement system.

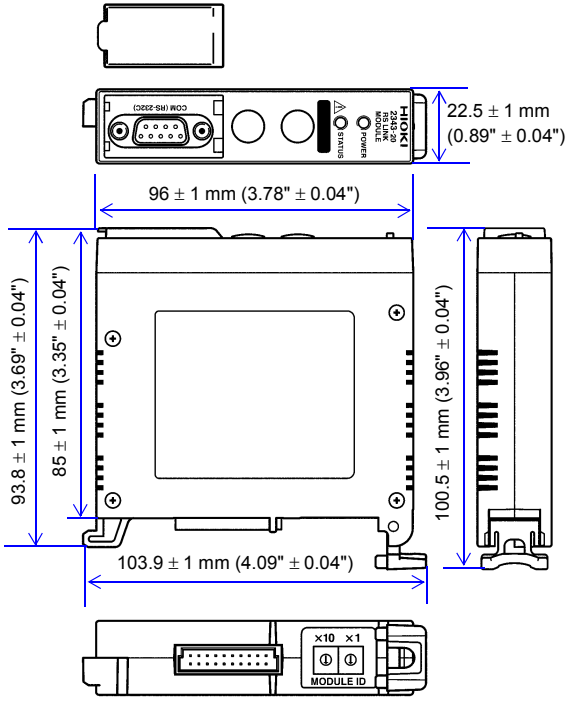
1.3 Name and Function of the Parts



POWER LED	Goes on or flashes when power is supplied to the module. Remains on, flashes, or changes to another color according to the state of the module. **POWER LED indication** Lit in green : Data being recorded. Flashing in green : Standing by. Lit in red : Non-recoverable error occurred. *1 Flashing in red : Recoverable error occurred. *2
STATUS LED	Stays ON, begins flashing or changes color depending on the operating status of the module. Lit in green : Communicating via RS-232C.
RS-232C connector	Connect an RS-232C cable (optional) to this terminal.
Module ID setting dials	Use the dial to set the module's identification No.

*1: The module needs repair. Contact your dealer or Hioki representative.
*2: The same module ID may be used by another module.

1.4 Dimension Diagrams

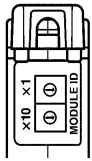


Settings Chapter 2

Setting the Module ID

You can connect up to 63 modules (measurement, input/output, and link) to one communications module.

Setting Procedure



Use the module ID setting dial to set the ID No. of the module to a number from 01 and to 63. (You cannot set a number other than the above.)

NOTE

- Ensure that the set ID is not used for any other module connected to the same communications module.
- The ID numbers of modules need not be consecutive.
- Setting the ID to 99, then turning on the power resets all internal settings to the defaults.
- The module ID and COM ID are not related and can be set independently.
- For COM ID, see the instruction manual for the communications module.

Preparations Chapter 3

3.1 Installing the Module

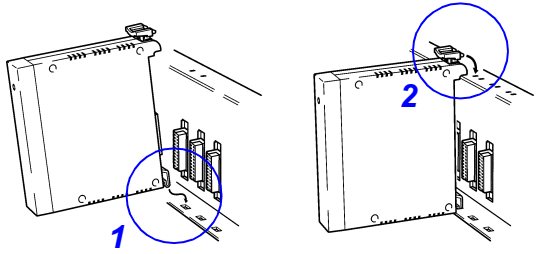
3.1.1 Installing the Module Base

⚠CAUTION Do not mount the module base on the ceiling where it may fall off.

Fasten the module base to a DIN rail or the wall according to the procedure described in the 2391 or 2392 series MODULE BASE instruction manual.

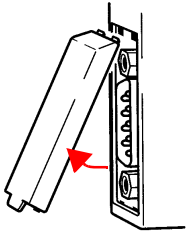
3.1.2 Mounting a Module on the Module Base

Mount a module on the module base as shown below. Ensure that the lever clicks.



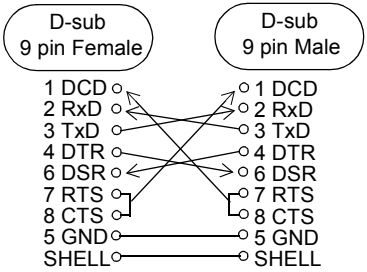
3.2 Connecting RS-232C Cable to the Module

1. Remove the cover from the RS-232C terminal on this module.
2. Connect the RS-232C cable to the module.
3. Connect the RS-232C cable to the external device.



Compatible Cables

- The 9637 RS-232C CABLE (1.8 m/ 5.9 feet)
- When using a commercially available cable, use one with the following wiring configuration:



NOTE When connecting with the 3168, use the 9612 RS-232C cable.

Specifications Chapter 4

4.1 Basic Specifications

Operations	Communicates with an external RS-232C device and obtains the status of or controls the device.
External Communications Interface	RS-232C Connector : D-SUB 9-pin Transmission rate: 9600/19200/38400/57600 bps Parity : None/Odd/Even Bit length : 7 bits/ 8 bits Stop bit : 1 bit/ 2 bits Handshake : None
Internal Communications Interface	CAN (for communications with the communications module at a rate of 500 kbps)
Standard Connectable Device	3331, 3332
Control of Device	Transmits commands from PC applications.

4.2 Function Specifications

Actual Time Management	Time management using PC application
Recording Start/End	Recording is started and ended by a command. (Immediate start, timed start, or timed end)
Recording Method	Interval recording Sends commands to an external RS device at the set recording intervals and records the values returned.
Recorded Data	1 data set: Time + value returned from an external device
Recording End Condition	Memory full stop or indefinite * Set the condition before the start of recording.
Quantity of Recorded Data	512 K bytes Flash memory
Data Acquisition Method	All logging data, data before, at, and after the specified time, or the current instantaneous value (monitored value)
Recording Interval	1/ 2/ 5/ 10/ 15/ 20/ 30 sec. 1/ 2/ 5/ 10/ 15/ 20/ 30/ 60 min.
Data Deletion	All items of data are deleted by a command. * New data will be added to the previous data at the start of recording.
Power Outage Protection	After recovering from a power outage, the instrument automatically returns to the state held before the outage.

4.3 General Specifications

Clock Accuracy	±100 ppm (Reference value at temperature from 0 to 50°C (32 to 122°F) without the communications module)
Backup	Recorded data (saved in flash memory) * Data loss for up to 2 minutes before and after a power outage may occur.
Rated Supply Voltage	5 ± 0.3 VDC
Maximum Rated Power	1.4 W
Dimensions	Approx. 22.5W × 96H × 85D mm (0.89"W × 3.78"H × 3.35"D) (excluding projections)
Mass	Approx. 150 g (5.3 oz.)
Accessories	Instruction manual
Options	9637 RS-232C CABLE 1
Operating Temperature and Humidity	0 to 50°C (32 to 122°F), 80%RH or less (with no condensation)
Storage Temperature and Humidity	-10 to 50°C (14 to 122°F), 80%RH or less (with no condensation)
Operating Environment	Indoors, <2000 m (6562 feet) ASL
Standards Applying	Safety EN61010-1:2001 Pollution degree 2 EMC EN61326:1997+A1:1998+A2:2001 Class A

Maintenance and Service Chapter 5

5.1 Cleaning

To clean the instrument, wipe it gently with a soft cloth moistened with water or mild detergent. Never use solvents such as benzene, alcohol, acetone, ether, ketones, thinners or gasoline, as they can deform and discolor the case.

5.2 Service

⚠CAUTION Never modify the instrument. Only Hioki service engineers should disassemble or repair the instrument. Failure to observe these precautions may result in fire, electric shock, or injury.

- If the instrument seems to be malfunctioning, confirm that the cables are not open circuited before contacting your dealer or Hioki representative.
- When sending the instrument for repair, pack carefully to prevent damage in transit. Include cushioning material so the instrument cannot move within the package. Be sure to include details of the problem. Hioki cannot be responsible for damage that occurs during shipment.
- When transporting the instrument or a system containing this module, tape the front of the module or take similar measures to avoid losing internal components.

HIOKI

DECLARATION OF CONFORMITY

Manufacturer's Name: HIOKI E.E. CORPORATION

Manufacturer's Address: 81 Koizumi, Ueda, Nagano 386-1192, Japan

Product Name: RS LINK MODULE

Model Number: 2343-20

Option: 9637 RS-232C CABLE

The above mentioned products comform to the following product specifications:

Safety: EN61010-1:2001

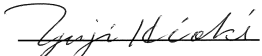
EMC: EN61326:1997+A1:1998+A2:2001
Class A equipment
Equipment intended for use in industrial location

Supplementary Information:

The products herewith comply with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

HIOKI E.E. CORPORATION

16 July 2004



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Instruction Manual

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