
GM8015 Polarization Controller

Programming Guide



Notices

This document contains UC INSTRUMENTS CORP. proprietary information that is protected by copyright. All rights are reserved. This document can't be reproduced in (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from UC Instruments Corp.

Subject Matter

The material in this document is subject to change without notice.

UC Instruments Corp. makes no warranty of any kind with regard to this printed material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

UC Instruments Corp. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Warranty

This UC Instruments Corp. product is warranted against defects in material and workmanship for a period of one year from date of shipment. During the warranty period, UC INSTRUMENTS CORP. will, at its option, either repair or replace products that prove to be defective.

For warranty service or repair, this product must be returned to a service facility designated by UC Instruments Corp. Buyer shall prepay shipping charges to UC Instruments Corp. and UC Instruments Corp. shall pay shipping charges to return the product to Buyer. However, Buyer shall pay all shipping charges, duties, and taxes for products returned to UC Instruments Corp. from another country.

UC Instruments Corp. warrants that its software and firmware designated by UC Instruments Corp. for use with an instrument will execute its programming instructions when properly installed on that instrument. UC Instruments Corp. does not warrant that the operation of the instrument, software, or firmware will be uninterrupted or error free.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

No other warranty is expressed or implied. UC Instruments Corp. specifically disclaims the implied warranties of Merchantability and Fitness for a Particular Purpose.

Exclusive Remedies

The remedies provided herein are Buyer's sole and exclusive remedies.

UC Instruments Corp. shall not be liable for any direct, indirect, special, incidental, or consequential damages whether based on contract, tort, or any other legal theory.

Assistance

Product maintenance agreements and other customer assistance agreements are available for UC Instruments Corp. products. For any assistance contact the UC Instruments Corp. Maintenance Service Center.

CONTENT

Communication Port4

RS232 Serial Port 4

Syntax.....4

Commands Format 4

Specifying the Paddle 5

Commands Lists.....6

Common Commands..... 6

 *IDN? 6

Output Commands 7

 OUTPUT : HOME 7

 OUTPUT : RATE ?..... 7

 OUTPUT : RATE 8

 OUTPUT : AUTO ?..... 8

 OUTPUT : AUTO 8

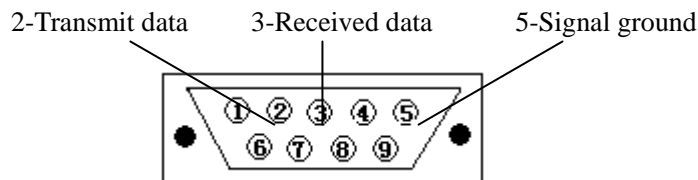
 OUTPUT : PADDLE[n] : POSITION ? 9

 OUTPUT : PADDLE[n] : POSITION 9

UC INSTRUMENTS CORP. CONTACT INFORMATION10

Communication Port

RS232 Serial Port



The DB9 connector and pin assignments for GM8015

Communication setting:

1 Start bit, 8 Data bit, 1 Stop bit, No parity checking. Baud rate: 115200 bps.

Syntax

Commands Format

The following symbols describe the syntax of commands in the following chapters. The command is case-insensitive and can be written in upper case or in lower case or in both upper and lower case.

Example The command
READ1 : POW ?
can also be written in lower case as
read1 : pow ?
or it can be written as
Read1 : Pow ?

Put a colon (:) before a component to indicate a move to the next level of the combination.

Example SENS1 : POW : WAVELENGTH ?

A command message is ended by a carriage return and a line feed character (`\CR\LF`).

The response format specifies what the instrument returns in response to a query. All responses are terminated with `\CR\LF >`.

For the query command, if normal, the instrument returns response value with a `>`, if an error occurs, then returns `>`.

For the written command, if normal, the instrument returns `Ok! >`. If an error occurs, then returns `>`.

`<...>` The characters between angled brackets show the kind of data that you require, or that you get in a response. You don't type the angled brackets in the actual message.

`[...]` The characters between square brackets show optional information that you can include with the message.

`/` The oblique line shows an either-or choice of data, for example, `a/b` means either a or b, but not both simultaneously.

All characters not between angled brackets are terminal symbols and must be sent exactly as shown. Items between angled brackets are not-terminal symbols, descriptions of these items follow the syntax description.

Spaces are ignored, they can be inserted to improve readability.

Specifying the Paddle

The GM8015 has four paddles. Complete and continuous polarization adjustability is achieved by independently adjusting each paddle over an angular range of 180° . This range is divided into 1600 equal steps (0000-1600), providing an adjustment resolution of 0.1125° .

For commands that require you to specify a paddle, the serial number of a paddle is represented by `[n]` in a command.

The positions of these paddles are shown on the LCD of GM8015, from 0 to 3, from left to right.

For example, query the position of the paddle 2. The command is `OUTPUT : PADDLE[n] : POSITION ?`, you should send:

- `OUTPUT : PADDLE2 : POSITION ?`

Commands Lists

Common Commands

<u>Command</u>	<u>Function</u>
*IDN?	Identification query

*IDN?

Syntax *IDN?

Response UC Instruments, GM8015 Polarization Controller,
 ** SN:GG042521001, **Firmware: 2.00

UC Instruments: Manufacturer

GM8015 Polarization Controller: Instrument model

** SN:GG042521001: Serial number of this instrument

** Firmware 2.00: Firmware Revision

Description The *IDN? query gets the instrument identification over the interface.

Output Commands

Command	Parameter
OUTPUT	
: HOME	
: RATE ?	
: RATE	<1 / 2 / 3 / 4>
: AUTO ?	
: AUTO	<0 / 1>
: PADDLE[n]	n = 0 / 1 / 2 / 3, denotes the serial number of a paddle.
: POSITION ?	
: POSITION	<VALUE>

OUTPUT : HOME

Syntax OUTPUT : HOME

Description This command resets all the paddles to home position.

Example OUTPUT : HOME
>

OUTPUT : RATE ?

Syntax OUTPUT: RATE?

Response <1 / 2 / 3 / 4>

Description This command queries the current scan rate.

Example OUTPUT : RATE ?
1
>

OUTPUT : RATE

Syntax OUTPUT : RATE <1 / 2 / 3 / 4>

Parameter <1 / 2 / 3 / 4>

Description This command sets the scan rate of the paddles to one of four possible value.

Example OUTPUT : RATE 1
>

OUTPUT : AUTO ?

Syntax OUTPUT: AUTO?

Response <0 / 1>

0 Manual mode

1 Automatic mode

Description This command queries the control mode of the instrument.

Example OUTPUT : AUTO ?
0
>

OUTPUT : AUTO

Syntax OUTPUT : AUTO <0 / 1>

Parameter <0 / 1>

0 Manual mode

1 Automatic mode

Description This command sets the control mode of the instrument.

Example OUTPUT : AUTO 1
>

OUTPUT : PADDLE[n] : POSITION ?

Syntax OUTPUT : PADDLE[n] : POSITION ?
Response <0 ~ 1600>
Description This command queries the position of the specified paddle when the instrument is in manual mode.

Example OUTPUT : PADDLE1 : POSITION ?
 512
 >

OUTPUT : PADDLE[n] : POSITION

Syntax OUTPUT: PADDLE[n] : POSITION <VALUE>
Parameter < VALUE > Ranges form 0 to 1600.

Description This command sets the position of the specified paddle when the instrument is in manual mode. If the instrument is scanning, don't perform this command for avoiding malfunction.

Example OUTPUT : PADDLE1 : POSITION 125
 >

UC INSTRUMENTS CORP. CONTACT INFORMATION

UC INSTRUMENTS CORPORATION

Add: 37498 Glenmoor Dr., Fremont, CA 94536 USA

Tel: +1-510-366-7353

Fax: +1-510-353-1809

Email: sales@ucinstruments.com

Website: www.ucistruments.com

MAINTENANCE SERVICE CENTER, GUILIN, CHINA

Address: No.16 Yi Feng south road, GuiLin, China

Tel: +86 773 5850657

Fax: +86 773 5814532

Website: www.ucigl.com