RIGOL

Programming Guide

DM3000 Series Digital Multimeter

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RIGOL Technologies, Inc.

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In This Manual

This manual provides guidance for the remote control of DM3000 series digital multimeter. It is assumed that readers of this manual have read DM3000 User's Guide and are familiar with the operation methods of DM3000.

The manual contains four parts:

Chapter 1
This chapter introduces you how to use SCPI commands to control the DM3000 series multimeter via remote interfaces.

Chapter 2
This chapter gives detailed information on each command supported by DM3000 series multimeter.

Chapter 3
This chapter lists the commands which are compatible with **RIGOL** DM3000 series multimeter in table form.

Appendix
The Appendix lists all the commands alphabetically in favor of quick reference.

Explanation:
DM3000 series digital multimeter consists of the following models. The main differences among the models are as listed in the table below.

Series	Model	Digit	Interface
DM306x	DM3064	6 ½	USB Host&Device, RS232, LAN, GPIB, Scan
	DM3062	6 ½	USB Host&Device, RS232, LAN, GPIB
	DM3061	6 ½	USB Host&Device, RS232
DM305x	DM3054	5 ¾	USB Host&Device, RS232, LAN, GPIB, Scan
	DM3052	5 ¾	USB Host&Device, RS232, LAN, GPIB
	DM3051	5 ¾	USB Host&Device, RS232

Unless otherwise noted, the contents in this manual are based on DM3064. For different model, the value of parameter of some command differs.

Contents

Chapter 1   Programming Overview

This chapter introduces how to program using **RIGOL** DM3000 series remote control commands to achieve remote measurement operations of the instrument.

Main topics of this chapter:

- Programming Introduction
- Symbol Description
- Parameter Type
- Command Set Introduction

Programming Introduction

This part introduces the basic programming operations. Via these programming commands, you can control the multimeter remotely. The operations that can be realized via the PC and multimeter include:

- Set the multimeter.
- Make Measurements.
- Acquire data (instrument working state and measurement results) from the multimeter.

The multimeter can communicate with the PC via USB, LAN, GPIB or RS-232 interface. For detailed connection method of each interface, refer to the corresponding User's Guide. The command words are sent and identified in ASCII character string so that users can easily control and make secondary development.

Symbol Description

1. Colon :

The command string usually starts with a colon (:) which is also used to separate command keyword and lower-level keyword.

2. Question Mark ?

A command followed by a question mark (?) is used to query the function under this command. A query command usually contains different data, and these data are separated by spaces. However, there are also some commands that do not contain any data.

3. Comma ,

"," is used to separate different types of parameters contained in a command. For example,
:DATAlog:CONFigure:FUNCtion {<DCV|DCI|RESistance|FRESistance>,<range>}

4. Braces { }

The contents enclosed in braces are parameters. If the parameters are separated by a vertical line (|), only one parameter can be selected at a time. For example, {ON|OFF} indicates that either ON or OFF can be used.

5. Triangle Brackets < >

The parameter enclosed in the triangle brackets must be replaced by an effective value which will be used as the data parameter of the command.

6. Square brackets [ ]

The parameters or command keywords enclosed in square brackets ([ ]) are optional or could be ignored. The square brackets ([ ]) will not be sent with the command. If none of the parameters are specified, the system will use a default. For example,
CONFigure[:VOLTage][:DC]
[{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]
If all the parameters enclosed in the square brackets are set to their defaults, the command can be abbreviated to:
CONFigure

Parameter Type

1. **MIN|MAX|DEF**

   Usually, MIN, MAX and DEF are used to represent the maximum, minimum and default values of a parameter. For example, in the command
   "**:MEASure:VOLTage:DC {0|1|2|3|4|MIN|MAX|DEF}**",
   MIN corresponds to 0, MAX corresponds to 4 and DEF corresponds to 2. For more details, please refer to "**:MEASure:VOLTage:DC**".

2. **Consecutive Integer Parameter**

   The parameter can be any integer within the effective range. Please do not set the parameter to a decimal; otherwise, error may occur. For example, in the command "**:SYSTem:DISPlay:BRIGht**", the parameter can be any integer within 0 and 255.

3. **Consecutive Real Number Parameter**

   The parameter can be any value within the effective range according to the precision requirement. For example, in the command "**:CALCulate:NULL:OFFSet**", the parameter can hold seven digits after the decimal point.

4. **Discrete Parameter**

   The parameter should be one of the values listed in the command. For example, in the command "**:MEASure:VOLTage:AC**", the parameter can only be 0, 1, 2, 3 or 4.

5. **Bool Parameter**

   The parameter can only be ON (1) or OFF (0). For example, in the command "**:SYSTem:BEEPer:STATe**", the parameter can only be ON (1) or OFF (0).

6. **ASCII Character string**

   The parameter should be a combination of ASCII characters. For example, in the command "**:SYSTem:CLOCk:DATE**", the parameter is a character string in date format.

Command Set Introduction

To meet the different requirements of users, DM3000 provides **RIGOL** command set and two other command sets that are compatible with DM3000.

- **RIGOL** DM3000 command Set
- Compatible Agilent command Set
- Compatible Fluke command Set

By default, **RIGOL** command set is used at power-on. You can send the **CMDSet** command to switch the command set. The format of the command is as follows.

CMDSet {RIGOL|AGILENT|FLUKE}
CMDSet?

Chapter 2   Command System

In **RIGOL** DM3000 series digital multimeter command set, all the command parameters and return values are ASCII characters and all the commands are case-insensitive.

RIGOL DM3000 series digital multimeter includes the following command subsystems.

- Common Commands
- :FUNCtion Commands
- :MEASure Commands
- :RESOlution Commands
- :SYSTem Commands
- :UTILity Commands
- :TRIGger Commands
- :CALCulate Commands
- :DATAlog Commands
- :SCAN Commands

Common Commands

The commands are used to query the basic information of the instrument or perform common operations. These commands include:

- *CLS
- *IDN?
- *RST
- CMDSet

1. *CLS	
Syntax	*CLS
Function	Clear all the event registers and the error queue.

2. *IDN?	
Syntax	*IDN?
Function	The query returns the instrument ID character string. For example, Rigol Technologies,DM3064,DM3A083100011,03.12.00.03.09.00

3. *RST	
Syntax	*RST
Function	Reset the instrument and restore it to factory defaults.

4. CMDSet	
Syntax	CMDSet? CMDSet {RIGOL|AGILENT|FLUKE}
Function	Specify the command set currently used by the instrument. The query returns RIGOL, AGILENT or FLUKE.
Default	RIGOL
Note: unless otherwise noted, the return values in this manual do not contain double quotation marks.	

:FUNCtion Commands

The commands are used to enable the common measurement functions of the instrument and have the same functions as the corresponding buttons at the front panel. These commands mainly include:

- :FUNCtion?
- :FUNCtion:VOLTage:DC
- :FUNCtion:VOLTage:DC:RATIo
- :FUNCtion:VOLTage:AC
- :FUNCtion:CURRent:DC
- :FUNCtion:CURRent:AC
- :FUNCtion:RESistance
- :FUNCtion:FRESistance
- :FUNCtion:FREQuency
- :FUNCtion:PERiod
- :FUNCtion:CONTinuity
- :FUNCtion:DIODe
- :FUNCtion:CAPacitance

1. :FUNCtion?	
Syntax	:FUNCtion?
Function	The query returns the measurement function currently used by the instrument. For example, DCV.

2. :FUNCtion:VOLTage:DC	
Syntax	:FUNCtion:VOLTage:DC
Function	Enable the DC voltage measurement function.
Explanation	The query (**:FUNCtion?**) returns DCV.

3. :FUNCtion:VOLTage:DC:RATIo	
Syntax	:FUNCtion:VOLTage:DC:RATIo
Function	Enable the ratio measurement function for DC voltage measurement.
Explanation	The query (**:FUNCtion?**) returns RATIO.

4. :FUNCtion:VOLTage:AC	
Syntax	:FUNCtion:VOLTage:AC
Function	Enable the AC voltage measurement function.
Explanation	The query (**:FUNCtion?**) returns ACV.

5. :FUNCtion:CURRent:DC	
Syntax	:FUNCtion:CURRent:DC
Function	Enable the DC current measurement function.
Explanation	The query (**:FUNCtion?**) returns DCI.

6. :FUNCtion:CURRent:AC	
Syntax	:FUNCtion:CURRent:AC
Function	Enable the AC current measurement function.
Explanation	The query (**:FUNCtion?**) returns ACI.

7. :FUNCtion:RESistance	
Syntax	:FUNCtion:RESistance
Function	Enable the 2-wire resistance measurement function.
Explanation	The query (**:FUNCtion?**) returns 2WR.

8. :FUNCtion:FRESistance	

Syntax	:FUNCtion:FRESistance
Function	Enable the 4-wire resistance measurement function.
Explanation	The query (**:FUNCtion?**) returns 4WR.

9.   :FUNCtion:FREQuency

Syntax	:FUNCtion:FREQuency
Function	Enable the frequency measurement function.
Explanation	The query (**:FUNCtion?**) returns FREQ.

10. :FUNCtion:PERiod

Syntax	:FUNCtion:PERiod
Function	Enable the period measurement function.
Explanation	The query (**:FUNCtion?**) returns PER.

11. :FUNCtion:CONTinuity

Syntax	:FUNCtion:CONTinuity
Function	Enable the continuity measurement function.
Explanation	The query (**:FUNCtion?**) returns CONT.

12. :FUNCtion:DIODe

Syntax	:FUNCtion:DIODe
Function	Enable the diode measurement function.
Explanation	The query (**:FUNCtion?**) returns DIODE.

13. :FUNCtion:CAPacitance

Syntax	:FUNCtion:CAPacitance
Function	Enable the capacitance measurement function.
Explanation	The query (**:FUNCtion?**) returns CAP.

:MEASure Commands

The commands are used to set the basic measurement functions of the instrument and have the same functions as the buttons at the front panel. These commands mainly include:

- :MEASure?
- :MEASure
- :MEASure:VOLTage:DC?
- :MEASure:VOLTage:DC
- :MEASure:VOLTage:DC:RANGe?
- :MEASure:VOLTage:DC:IMPEdance
- :MEASure:VOLTage:DC:DIGIt
- :MEASure:VOLTage:DC:RATIo?
- :MEASure:VOLTage:DC:RATIo:DIGIt
- :MEASure:VOLTage:AC?
- :MEASure:VOLTage:AC
- :MEASure:VOLTage:AC:RANGe?
- :MEASure:VOLTage:AC:FILTer
- :MEASure:VOLTage:AC:DIGIt
- :MEASure:VOLTage:AC:FREQuency?
- :MEASure:VOLTage:AC:FREQuency:DISPlay
- :MEASure:VOLTage:AC:FREQuency:HIDE
- :MEASure:VOLTage:AC:FREQuency:STATe?
- :MEASure:CURRent:DC?
- :MEASure:CURRent:DC
- :MEASure:CURRent:DC:RANGe?
- :MEASure:CURRent:DC:DIGIt
- :MEASure:CURRent:AC?
- :MEASure:CURRent:AC
- :MEASure:CURRent:AC:RANGe?
- :MEASure:CURRent:AC:DIGIt
- :MEASure:CURRent:AC:FREQuency?
- :MEASure:CURRent:AC:FREQuency:DISPlay
- :MEASure:CURRent:AC:FREQuency:HIDE
- :MEASure:CURRent:AC:FREQuency:STATe?
- :MEASure:RESistance?
- :MEASure:RESistance
- :MEASure:RESistance:RANGe?
- :MEASure:RESistance:DIGIt
- :MEASure:FRESistance?
- :MEASure:FRESistance
- :MEASure:FRESistance:RANGe?
- :MEASure:FRESistance:DIGIt
- :MEASure:FREQuency?
- :MEASure:FREQuency
- :MEASure:FREQuency:RANGe?
- :MEASure:FREQuency:DIGIt
- :MEASure:PERiod?
- :MEASure:PERiod
- :MEASure:PERiod:RANGe?
- :MEASure:PERiod:DIGIt
- :MEASure:CONTinuity?
- :MEASure:CONTinuity
- :MEASure:DIODe?
- :MEASure:DIODe:DIGIt
- :MEASure:CAPacitance?
- :MEASure:CAPacitance
- :MEASure:CAPacitance:RANGe?
- :MEASure:CAPacitance:DIGIt

1. :MEASure?	
Syntax	:MEASure?
Function	Query whether the current measurement is finished. If yes, the query returns TRUE; otherwise, the query returns FALSE.

2. :MEASure	
Syntax	:MEASure {AUTO|MANU}
Function	Set the measurement mode to Auto or Manual.
Default	AUTO

3. :MEASure:VOLTage:DC?	
Syntax	:MEASure:VOLTage:DC?
Function	The query returns the measurement value of DC voltage in scientific notation (for example, +2.53021747E-04) and the unit is V.

4. :MEASure:VOLTage:DC		
Syntax	:MEASure:VOLTage:DC {0|1|2|3|4|MIN|MAX|DEF}	
Function	Set the range of DC voltage measurement.	
Explanation	● The measurement mode will change to "Manual" while you set the range.	
	● The range corresponding to each parameter is as follows.	

Parameter	Range	
	DM306x	DM305x
0	200 mV	400 mV
1	2 V	4 V
2	20 V	40 V
3	200 V	400 V
4	1000 V	1000 V
MIN	200 mV	400 mV
MAX	1000 V	1000 V
DEF	20 V	40 V

Example	Set the range to the minimum:
	:MEASure:VOLTage:DC 0 or
	:MEASure:VOLTage:DC MIN

5. :MEASure:VOLTage:DC:RANGe?	
Syntax	:MEASure:VOLTage:DC:RANGe?

Function	Query the current range of DC voltage measurement. The query returns 0, 1, 2, 3 or 4.

6. :MEASure:VOLTage:DC:IMPEdance

Syntax	:MEASure:VOLTage:DC:IMPEdance? :MEASure:VOLTage:DC:IMPEdance {10M|10G}
Function	Set the DC impedance to 10MΩ or >10GΩ. The query returns 10M or 10G.
Explanation	For DM306x, ">10G" is available only on 200 mV, 2 V and 20 V ranges of DC voltage. For DM305x, ">10G" is available only on 400 mV, 4 V and 40 V ranges of DC voltage.

7. :MEASure:VOLTage:DC:DIGIt

Syntax	:MEASure:VOLTage:DC:DIGIt? :MEASure:VOLTage:DC:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of DC voltage measurement value. The query returns 5, 6 or 7.
Explanation	● DEC and INC settings are invalid when the display digits are 5 and 7, respectively. ● The definition of each parameter is as follows.

Parameter	Explanation	Note
INC	increase the digit by one	--
DEC	decrease the digit by one	--
5	the digit is 5	--
6	the digit is 6	--
7	the digit is 7	DM305x only accepts and don't response to this value, the return value is still 6.

Example	Set the display digit of DC voltage measurement to 6: :MEASure:VOLTage:DC:DIGIt 6 Decrease the display digit by one: :MEASure:VOLTage:DC:DIGIt DEC

8. :MEASure:VOLTage:DC:RATIo?

Syntax	:MEASure:VOLTage:DC:RATIo?

Function	The query returns the ratio of two DC voltages in scientific notation, for example, +1.74214858E-01.
Explanation	The instrument should input two DC voltages at the same time.

9. :MEASure:VOLTage:DC:RATIo:DIGIt	
Syntax	:MEASure:VOLTage:DC:RATIo:DIGIt?
	:MEASure:VOLTage:DC:RATIo:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit for the ratio of two DC voltages.
	The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the ratio display digit to 6:
	:MEASure:VOLTage:DC:RATIo:DIGIt 6
	Decrease the display digit by one:
	:MEASure:VOLTage:DC:RATIo:DIGIt DEC

10. :MEASure:VOLTage:AC?	
Syntax	:MEASure:VOLTage:AC?
Function	The query returns the AC voltage measurement value in the scientific notation (for example, +6.59000527E-03) and the unit is V.

11. :MEASure:VOLTage:AC	
Syntax	:MEASure:VOLTage:AC {0|1|2|3|4|MIN|MAX|DEF}
Function	Set the range of AC voltage measurement.
Explanation	The range corresponding to each parameter is as follows.

Parameter	Range
0	200 mV
1	2 V
2	20 V
3	200 V
4	750 V
MIN	200 mV
MAX	750 V
DEF	20 V

Example	Set the range to the minimum:
	:MEASure:VOLTage:AC 0 or
	:MEASure:VOLTage:AC MIN

12. :MEASure:VOLTage:AC:RANGe?	
Syntax	:MEASure:VOLTage:AC:RANGe?
Function	Query the range of AC voltage measurement.
	The query returns 0, 1, 2, 3 or 4.

13. :MEASure:VOLTage:AC:FILTer	
Syntax	:MEASure:VOLTage:AC:FILTer?
	:MEASure:VOLTage:AC:FILTer {SLOW|MID|FAST}
Function	Set the AC filter mode to Slow, Mid or Fast.
	The query returns SLOW, MID or FAST.
Default	FAST

14. :MEASure:VOLTage:AC:DIGIt	
Syntax	:MEASure:VOLTage:AC:DIGIt?
	:MEASure:VOLTage:AC:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of AC voltage measurement value.
	The query returns 5, 6 or 7.
Explanation	Refer to the "**Explanation**" in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of AC voltage measurement value to 6:
	:MEASure:VOLTage:AC:DIGIt 6
	Decrease the display digit by one:
	:MEASure:VOLTage:AC:DIGIt DEC

15. :MEASure:VOLTage:AC:FREQuency?	
Syntax	:MEASure:VOLTage:AC:FREQuency?
Function	The query returns the current frequency of AC voltage measurement in
	scientific notation (for example, +5.30803456e+02) and the unit is Hz.
Explanation	The multimeter should work under the AC voltage measurement mode
	when you use this command.

16. :MEASure:VOLTage:AC:FREQuency:DISPlay	
Syntax	:MEASure:VOLTage:AC:FREQuency:DISPlay
Function	Display the frequency of the AC signal on the secondary screen during
	AC voltage measurement.
Explanation	The multimeter should work under the AC voltage measurement mode
	when you use this command.

17. :MEASure:VOLTage:AC:FREQuency:HIDE	
Syntax	:MEASure:VOLTage:AC:FREQuency:HIDE
Function	Hide the frequency on the secondary screen during AC voltage measurement.
Explanation	The command is valid only when the frequency display on the secondary display is enabled in AC voltage measurement.

18. :MEASure:VOLTage:AC:FREQuency:STATe?	
Syntax	:MEASure:VOLTage:AC:FREQuency:STATe?
Function	Query whether the frequency is displayed on the secondary screen during AC voltage measurement. The query returns DISPLAY or HIDE.

19. :MEASure:CURRent:DC?	
Syntax	:MEASure:CURRent:DC?
Function	The query returns the DC current measurement value in scientific notation (for example, -3.74725404E-06) and the unit is A.

20. :MEASure:CURRent:DC	
Syntax	:MEASure:CURRent:DC {0|1|2|3|4|MIN|MAX|DEF}
Function	Set the range of DC current measurement.
Explanation	- The measurement mode will change to "Manual" while you set the range. - The range corresponding to each parameter is as follows. <table><tr><th>Parameter</th><th>Range</th></tr><tr><td>0</td><td>2 mA</td></tr><tr><td>1</td><td>20 mA</td></tr><tr><td>2</td><td>200 mA</td></tr><tr><td>3</td><td>1 A</td></tr><tr><td>4</td><td>10 A</td></tr><tr><td>MIN</td><td>2 mA</td></tr><tr><td>MAX</td><td>10 A</td></tr><tr><td>DEF</td><td>200 mA</td></tr></table>
Example	Set the range of DC current measurement to the maximum: :MEASure:CURRent:DC 4 or :MEASure:CURRent:DC MAX

21. :MEASure:CURRent:DC:RANGe?	
Syntax	:MEASure:CURRent:DC:RANGe?
Function	Query the range of DC current measurement.
	The query returns 0, 1, 2, 3 or 4.

22. :MEASure:CURRent:DC:DIGIt	
Syntax	:MEASure:CURRent:DC:DIGIt?
	:MEASure:CURRent:DC:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of DC current measurement value.
	The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of DC current measurement value to 6:
	:MEASure:CURRent:DC:DIGIt 6
	Decrease the display digit by one:
	:MEASure:CURRent:DC:DIGIt DEC

23. :MEASure:CURRent:AC?	
Syntax	:MEASure:CURRent:AC?
Function	The query returns the AC current measurement value in scientific
	notation (for example, +4.29493009E-05) and the unit is A.

24. :MEASure:CURRent:AC	
Syntax	:MEASure:CURRent:AC {0|1|2|3|MIN|MAX|DEF}
Function	Set the range of AC current measurement.
Explanation	● The measurement mode will change to "Manual" while you set the range.
	● The range corresponding to each parameter is as follows.

Parameter	Range
0	20 mA
1	200 mA
2	2 A
3	10 A
MIN	20 mA
MAX	10 A
DEF	200 mA

Example	Set the range of AC current measurement to the maximum:
	:MEASure:CURRent:AC 3 or

	:MEASure:CURRent:AC MAX

25. :MEASure:CURRent:AC:RANGe?	
Syntax	:MEASure:CURRent:AC:RANGe?
Function	Query the range of AC current measurement. The query returns 0, 1, 2 or 3.

26. :MEASure:CURRent:AC:DIGIt	
Syntax	:MEASure:CURRent:AC:DIGIt? :MEASure:CURRent:AC:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of AC current measurement value.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of AC current measurement value to 6: :MEASure:CURRent:AC:DIGIt 6 Decrease the display digit by one: :MEASure:CURRent:AC:DIGIt DEC

27. :MEASure:CURRent:AC:FREQuency?	
Syntax	:MEASure:CURRent:AC:FREQuency?
Function	The query returns the frequency of AC current measurement in scientific notation (for example, +5.30803456e+02) and the unit is Hz.
Explanation	The multimeter should work under the AC current measurement mode while you use this command.

28. :MEASure:CURRent:AC:FREQuency:DISPlay	
Syntax	:MEASure:CURRent:AC:FREQuency:DISPlay
Function	Display the frequency of the AC signal on the secondary screen (lower left) during AC current measurement.
Explanation	The multimeter should work under the AC voltage measurement mode when you use this command.

29. :MEASure:CURRent:AC:FREQuency:HIDE	
Syntax	:MEASure:CURRent:AC:FREQuency:HIDE
Function	Hide the frequency on the secondary screen during AC current measurement.
Explanation	The command is valid only when the frequency display on the

	secondary display is enabled in AC current measurement.

30. :MEASure:CURRent:AC:FREQuency:STATe?

Syntax	:MEASure:CURRent:AC:FREQuency:STATe?
Function	Query whether the frequency is displayed on the secondary screen during AC current measurement. The query returns DISPLAY or HIDE.

31. :MEASure:RESistance?

Syntax	:MEASure:RESistance?
Function	The query returns the 2-wire resistance measurement value in scientific notation and the unit is Ω.

32. :MEASure:RESistance

Syntax	:MEASure:RESistance {0|1|2|3|4|5|6|MIN|MAX|DEF}
Function	Set the range of 2-wire resistance measurement.
Explanation	- The measurement mode will change to "Manual" while you set the range. - The range corresponding to each parameter is as follows.

Parameter	Range	
	DM306x	DM305x
0	200 Ω	400 Ω
1	2 kΩ	4 kΩ
2	20 kΩ	40 kΩ
3	200 kΩ	400 kΩ
4	1 MΩ	4 MΩ
5	10 MΩ	100 MΩ
6	100 MΩ	
MAX	100 MΩ	100 MΩ
MIN	200 Ω	400 Ω
DEF	200 kΩ	400 kΩ

Example	Set the range of 2-wire resistance measurement to the minimum: :MEASure:RESistance 0 or :MEASure:RESistance MIN

33. :MEASure:RESistance:RANGe?

Syntax	:MEASure:RESistance:RANGe?

Function	Query the current range of 2-wire resistance measurement.
	The query returns 0, 1, 2, 3, 4, 5 or 6.

34. :MEASure:RESistance:DIGIt	
Syntax	:MEASure:RESistance:DIGIt?
	:MEASure:RESistance:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of 2-wire resistance measurement value.
	The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of 2-wire resistance measurement value to 6:
	:MEASure:RESistance:DIGIt 6
	Decrease the display digit by one:
	:MEASure:RESistance:DIGIt DEC

35. :MEASure:FRESistance?	
Syntax	:MEASure:FRESistance?
Function	The query returns the 4-wire resistance measurement value in
	scientific notation (for example, +2.366031E+03) and the unit is Ω.

36. :MEASure:FRESistance	
Syntax	:MEASure:FRESistance {0|1|2|3|4|5|6|MIN|MAX|DEF}
Function	Set the range of 4-wire resistance measurement.
Explanation	● Refer to the "**Explanation**" in **:MEASure:RESistance**.
Example	Set the range of 4-wire resistance measurement to the minimum:
	:MEASure:FRESistance 0 or
	:MEASure:FRESistance MIN

37. :MEASure:FRESistance:RANGe?	
Syntax	:MEASure:FRESistance:RANGe?
Function	Query the range of 4-wire resistance measurement.
	The query returns 0, 1, 2, 3, 4, 5 or 6.

38. :MEASure:FRESistance:DIGIt	
Syntax	:MEASure:FRESistance:DIGIt?
	:MEASure:FRESistance:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of 4-wire resistance measurement value.
	The query returns 5, 6 or 7.

Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of 4-wire resistance measurement value to 6: :MEASure:FRESistance:DIGIt 6 Decrease the display digit by one: :MEASure:FRESistance:DIGIt DEC

39. :MEASure:FREQuency?	
Syntax	:MEASure:FREQuency?
Function	The query returns the frequency measurement value of the AC signal in scientific notation and the unit is Hz.

40. :MEASure:FREQuency	
Syntax	:MEASure:FREQuency {0|1|2|3|4|MIN|MAX|DEF}
Function	Set the voltage range of the input signal of frequency measurement.
Explanation	● For the meaning of each range label, please refer to the "**Explanation**" in **:MEASure:VOLTage:AC**. ● The frequency ranges from 3 Hz to 300 kHz.
Example	Set the voltage range of frequency measurement to the maximum: :MEASure:FREQuency 4 or :MEASure:FREQuency MAX

41. :MEASure:FREQuency:RANGe?	
Syntax	:MEASure:FREQuency:RANGe?
Function	Query the AC voltage range currently used in frequency measurement. The query returns 0, 1, 2, 3 or 4.

42. :MEASure:FREQuency:DIGIt	
Syntax	:MEASure:FREQuency:DIGIt? :MEASure:FREQuency:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of frequency measurement value. The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of frequency measurement value to 6: :MEASure:FREQuency:DIGIt 6 Decrease the display digit by one: :MEASure:FREQuency:DIGIt DEC

43. :MEASure:PERiod?	
Syntax	:MEASure:PERiod?
Function	The query returns the period measurement value in scientific notation (for example, +2.77679688E-03) and the unit is s.

44. :MEASure:PERiod	
Syntax	:MEASure:PERiod {0|1|2|3|4|MIN|MAX|DEF}
Function	Set the period measurement range.
Explanation	● For the meaning of each range label, please refer to the "**Explanation**" in **:MEASure:VOLTage:AC**. ● The period measurement ranges from 3.3 us to 0.33 s.
Example	Set the period measurement range to the maximum: :MEASure:PERiod 4 or :MEASure:PERiod MAX

45. :MEASure:PERiod:RANGe?	
Syntax	:MEASure:PERiod:RANGe?
Function	Query the AC voltage range currently used by period measurement. The query returns 0, 1, 2, 3 or 4.

46. :MEASure:PERiod:DIGIt	
Syntax	:MEASure:PERiod:DIGIt? :MEASure:PERiod:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of period measurement value. The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of period measurement value to 7: :MEASure:PERiod:DIGIt 7 Decrease the display digit by one: :MEASure:PERiod:DIGIt DEC

47. :MEASure:CONTinuity?	
Syntax	:MEASure:CONTinuity?
Function	The query returns the resistance connected to the multimeter under continuity measurement in scientific notation and the unit is Ω.

48. :MEASure:CONTinuity	

Syntax	:MEASure:CONTinuity {*<value>*|MIN|MAX|DEF}
Function	Set the short-circuit resistance of continuity measurement.
Explanation	● *<value>* ranges from 1 to 2000 and the unit is Ω. ● The "DEF" is 10.
Example	Set the short-circuit resistance to 1 kΩ: :MEASure:CONTinuity 1000

49. :MEASure:DIODe?

Syntax	:MEASure:DIODe?
Function	The query returns the voltage between the two ends of the diode in scientific notation and the unit is V.
Explanation	The beeper will buzz when $0.1V \leq V_{MEASured} \leq 2.4$ V during diode measurement.

50. :MEASure:DIODe:DIGIt

Syntax	:MEASure:DIODe:DIGIt? :MEASure:DIODe:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of diode measurement value. The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of diode measurement value to 6: :MEASure:DIODe:DIGIt 6 Decrease the display digit by one: :MEASure:DIODe:DIGIt DEC

51. :MEASure:CAPacitance?

Syntax	:MEASure:CAPacitance?
Function	The query returns the capacitance measurement value in scientific notation (for example, +1.19195857E-09) and the unit is F.

52. :MEASure:CAPacitance

Syntax	:MEASure:CAPacitance {0|1|2|3|4|5|MIN|MAX|DEF}
Function	Set the range of capacitance measurement.
Explanation	● The measurement mode will change to "Manual" while you set the range. ● The range corresponding to each parameter is as follows.

Parameter	Range	
	DM306x	DM305x
0	2 nF	4 nF
1	20 nF	40 nF
2	200 nF	400 nF
3	2 uF	4 uF
4	20 uF	40 uF
5	200 uF	200 uF
MIN	2 nF	4 nF
MAX	200 uF	200 uF
DEF	200 nF	400 nF

Example	Set the capacitance range to the maximum:
	:MEASure:CAPacitance 5 or
	:MEASure:CAPacitance MAX

53. :MEASure:CAPacitance:RANGe?

Syntax	:MEASure:CAPacitance:RANGe?
Function	Query the capacitance measurement range.
	The query returns 0, 1, 2, 3, 4 or 5.

54. :MEASure:CAPacitance:DIGIt

Syntax	:MEASure:CAPacitance:DIGIt?
	:MEASure:CAPacitance:DIGIt {INC|DEC|5|6|7}
Function	Set the display digit of capacitance measurement value.
	The query returns 5, 6 or 7.
Explanation	Refer to the **"Explanation"** in **:MEASure:VOLTage:DC:DIGIt**.
Example	Set the display digit of capacitance measurement value to 6:
	:MEASure:CAPacitance:DIGIt 6
	Decrease the display digit by one:
	:MEASure:CAPacitance:DIGIt DEC

:RESOlution Commands

The commands are used to set the reading resolution of each measurement function of the instrument. These commands include:

- :RESOlution:VOLTage:DC
- :RESOlution:VOLTage:DC:RATIo
- :RESOlution:VOLTage:AC
- :RESOlution:CURRent:DC
- :RESOlution:CURRent:AC
- :RESOlution:RESistance
- :RESOlution:FRESistance
- :RESOlution:CAPacitance

1. :RESOlution:VOLTage:DC	
Syntax	:RESOlution:VOLTage:DC?
	:RESOlution:VOLTage:DC {0|1|2|MIN|MAX|DEF}
Function	Set the reading resolution of DC voltage measurement.
	The query returns 0, 1 or 2.
Explanation	● The DC voltage measurement function must be enabled before using this command.
	● The reading resolution corresponding to each parameter is as follows.

Value	Reading resolution	
	DM306x	DM305x
0	4 ½ digits	3 ¾ digits
1	5 ½ digits	4 ¾ digits
2	6 ½ digits	5 ¾ digits
MAX	6 ½ digits	5 ¾ digits
MIN	4 ½ digits	3 ¾ digits
DEF	5 ½ digits	4 ¾ digits

Example	Set the reading resolution of DC voltage measurement to 5 ½ digits:
	:RESOlution:VOLTage:DC 1

2. :RESOlution:VOLTage:DC:RATIo	
Syntax	:RESOlution:VOLTage:DC:RATIo?
	:RESOlution:VOLTage:DC:RATIo {0|1|2|MIN|MAX|DEF}
Function	Set the reading resolution of ratio measurement of DC voltage measurement.
	The query returns 0, 1 or 2.
Explanation	● The ratio measurement of DC voltage measurement function must be enabled before using this command.
	● For the reading resolution of each parameter, please refer to the "**Explanation**" in **:RESOlution:VOLTage:DC**.
Example	Set the reading resolution of ratio measurement of DC voltage measurement to 5 ½ digits:
	:RESOlution:VOLTage:DC:RATIo 1

3. :RESOlution:VOLTage:AC	
Syntax	:RESOlution:VOLTage:AC?

	:RESOlution:VOLTage:AC {0|1|2|MIN|MAX|DEF}
Function	Set the reading resolution of AC voltage measurement. The query returns 0, 1 or 2.
Explanation	● The AC voltage measurement function must be enabled before using this command. ● The "DEF" is 1. ● The reading resolution corresponding to each parameter is as follows.

Range	Reading resolution
0	3 ½ digits
1	4 ½ digits
2	5 ½ digits
MAX	5 ½ digits
MIN	3 ½ digits
DEF	4 ½ digits

Example	Set the reading resolution of AC voltage measurement to 5 ½ digits: :RESOlution:VOLTage:AC 2

4. :RESOlution:CURRent:DC

Syntax	:RESOlution:CURRent:DC? :RESOlution:CURRent:DC {0|1|2|MIN|MAX|DEF}
Function	Set the reading resolution of DC current measurement. The query returns 0, 1 or 2.
Explanation	● The DC current measurement function must be enabled before using this command. ● The reading resolution of each parameter.

Range	Reading resolution	
	DM306x	DM305x
0	4 ½ digits	3 ½ digits
1	5 ½ digits	4 ½ digits
2	6 ½ digits	5 ½ digits
MAX	6 ½ digits	5 ½ digits
MIN	4 ½ digits	3 ½ digits
DEF	5 ½ digits	4 ½ digits

Example	Set the reading resolution of DC current measurement to 5 ½ digits:

	:RESOlution:CURRent:DC 1

5.	:RESOlution:CURRent:AC	
Syntax	:RESOlution:CURRent:AC?	
	:RESOlution:CURRent:AC {0|1|2|MIN|MAX|DEF}	
Function	Set the reading resolution of AC current measurement.	
	The query returns 0, 1 or 2.	
Explanation	● The AC current measurement function must be enabled before using this command.	
	● For the reading resolution of each parameter, please refer to "**Explanation**" in **:RESOlution:VOLTage:AC**.	
Example	Set the reading resolution of AC current measurement to 5 ½ digits:	
	:RESOlution:CURRent:AC 2	

6.	:RESOlution:RESistance	
Syntax	:RESOlution:RESistance?	
	:RESOlution:RESistance {0|1|2|MIN|MAX|DEF}	
Function	Set the reading resolution of 2-wire resistance measurement.	
	The query returns 0, 1 or 2.	
Explanation	● The 2-wire resistance measurement function must be enabled before using this command.	
	● For the reading resolution of each parameter, please refer to the "**Explanation**" in **:RESOlution:VOLTage:DC**.	
Example	Set the reading resolution of 2-wire resistance measurement to 5 ½ digits:	
	:RESOlution:RESistance 1	

7.	:RESOlution:FRESistance	
Syntax	:RESOlution:FRESistance?	
	:RESOlution:FRESistance {0|1|2|MIN|MAX|DEF}	
Function	Set the reading resolution of 4-wire resistance measurement.	
	The query returns 0, 1 or 2.	
Explanation	● The 4-wire resistance measurement function must be enabled before using this command.	
	● For the reading resolution of each parameter, please refer to the "**Explanation**" in **:RESOlution:VOLTage:DC**.	

Example	Set the reading resolution of 4-wire resistance measurement to 5 ½ digits: :RESOlution:FRESistance 1

8. **:RESOlution:CAPacitance**	
Syntax	:RESOlution:CAPacitance? :RESOlution:CAPacitance {0|1|2|MIN|MAX|DEF}
Function	Set the reading resolution of capacitance measurement. The query returns 0, 1 or 2.
Explanation	● The capacitance measurement function must be enabled before using this command. ● For the reading resolution of each parameter, please refer to the "**Explanation**" in **:RESOlution:VOLTage:DC**. ● The "DEF" is 1.
Example	Set the reading resolution of capacitance measurement to 5 ½ digits: :RESOlution:CAPacitance 1

:SYSTem Commands

The commands are used to set the system parameters of the multimeter. These commands include:

- :SYSTem:BEEPer
- :SYSTem:BEEPer:STATe
- :SYSTem:CONFigure:POWEron
- :SYSTem:CONFigure:DEFault
- :SYSTem:LANGuage
- :SYSTem:CLOCk:STATe
- :SYSTem:CLOCk:DATE
- :SYSTem:CLOCk:TIME
- :SYSTem:FORMat:DECImal
- :SYSTem:FORMat:SEPArate
- :SYSTem:DISPlay:BRIGht
- :SYSTem:DISPlay:CONTrast
- :SYSTem:DISPlay:INVErt
- :SYSTem:MACAddr?
- :SYSTem:LANSerial?
- :SYSTem:EDITion?
- :SYSTem:TYPE?
- :SYSTem:SERIal?
- :SYSTem:SCANserial?
- :SYSTem:OPENtimes?
- :SYSTem:ERRor?
- :SYSTem:VERSion?

1. :SYSTem:BEEPer	
Syntax	:SYSTem:BEEPer
Function	Cause the beeper to buzz once. This command is usually used to test whether the beeper works normally.
Explanation	Please enable the beeper before sending this command.

2. :SYSTem:BEEPer:STATe	
Syntax	:SYSTem:BEEPer:STATe?
	:SYSTem:BEEPer:STATe {ON|OFF|1|0}
Function	Set the beeper state.
	The query returns ON or OFF.
Default	ON

3. :SYSTem:CONFigure:POWEron	
Syntax	:SYSTem:CONFigure:POWEron {LAST|DEF}
Function	Set the power-on configuration to LAST or DEF.
Default	DEF

4. :SYSTem:CONFigure:DEFault	
Syntax	:SYSTem:CONFigure:DEFault
Function	Restore the instrument settings to default values.

5. :SYSTem:LANGuage	
Syntax	:SYSTem:LANGuage?
	:SYSTem:LANGuage {CHinese|ENglish}
Function	Set the display language.
	The query returns CHINESE or ENGLISH.
Default	CHinese

6. :SYSTem:CLOCk:STATe	
Syntax	:SYSTem:CLOCk:STATe?
	:SYSTem:CLOCk:STATe {HIDE|DISPLay |1|0}
Function	Set the display mode of system clock.
	"DISPLay" and "1" denote displaying the clock on the multimeter interface; "HIDE" and "0" denote hiding the clock.
	The query returns DISPLAY or HIDE.
Default	DISPLay

7. :SYSTem:CLOCk:DATE	
Syntax	:SYSTem:CLOCk:DATE?
	:SYSTem:CLOCk:DATE *<value>*
Function	Set the system date.
	The query returns the current system date in "yyyy-mm-dd" form.
Explanation	The format of *<value>* is "yyyy-mm-dd" and its range is from
	2000-00-00 to 2026-12-31.

8. :SYSTem:CLOCk:TIME	
Syntax	:SYSTem:CLOCk:TIME?
	:SYSTem:CLOCk:TIME *<value>*
Function	Set the system time.
	The query returns the current system time in "hh-mm-ss" form.
Explanation	The format of *<value>* is "hh-mm-ss" and its range is from
	00-00-00 to 23-59-59.

9. :SYSTem:FORMat:DECImal	
Syntax	:SYSTem:FORMat:DECImal?
	:SYSTem:FORMat:DECImal {COMMA|DOT}
Function	Set the display format of the decimal point used by the multimeter.
	The query returns COMMA or DOT.
Explanation	● COMMA: display the decimal point as "," and change the "," used before to "·".
	● DOT: display the decimal point as "·" and change the "·" used before to ",".
	● As this command will change the data separator format, please use with care.
Default	DOT

10. :SYSTem:FORMat:SEPArate	
Syntax	:SYSTem:FORMat:SEPArate?
	:SYSTem:FORMat:SEPArate {ON|NONE|SPACE}
Function	Set the display format of system data separator.
	The query returns ON, NONE or SPACE.
Explanation	● ON: display the data separator.
	● NONE: do not display the data separator.

	● SPACE: use space as the data separator.
Default	ON

11. :SYSTem:DISPlay:BRIGht	
Syntax	:SYSTem:DISPlay:BRIGht?
	:SYSTem:DISPlay:BRIGht *<value>*
Function	Set the screen brightness.
	The query returns an integer, for example, 30.
Explanation	*<value>* can be any integer ranging from 0 to 32.
Default	22

12. :SYSTem:DISPlay:CONTrast	
Syntax	:SYSTem:DISPlay:CONTrast?
	:SYSTem:DISPlay:CONTrast *<value>*
Function	Set the screen contrast.
	The query returns an integer, for example, 30.
Explanation	*<value>* can be any integer ranging from 0 to 32.
Default	19

13. :SYSTem:DISPlay:INVErt	
Syntax	:SYSTem:DISPlay:INVErt
Function	Invert the display of the screen.

14. :SYSTem:MACAddr?	
Syntax	:SYSTem:MACAddr?
Function	Query the MAC address of the instrument.
	The query returns the MAC address in "XX-XX-XX-XX-XX-XX"
	form, for example, 00-19-AF-40-02-BB.

15. :SYSTem:LANSerial?	
Syntax	:SYSTem:LANSerial?
Function	Query the installation state of the interface module.
	The query returns "NONE" (not installed) or "Installed".

16. :SYSTem:EDITion?	
Syntax	:SYSTem:EDITion?
Function	The query returns the software version of the instrument in

	character string, for example, 03.12.00.03.09.00.02.

17. :SYSTem:TYPE?

Syntax	:SYSTem:TYPE?
Function	The query returns the instrument model in character string, for example, DM3064.

18. :SYSTem:SERIal?

Syntax	:SYSTem:SERIal?
Function	The query returns the instrument serial number in character string, for example, DM3A083100011.

19. :SYSTem:SCANserial?

Syntax	:SYSTem:SCANserial?
Function	The query returns the model of the scan module of the instrument in character string, for example, MultCard 2.1. If no scan module is installed, the query returns NONE.

20. :SYSTem:OPENtimes?

Syntax	:SYSTem:OPENtimes?
Function	The query returns the number of power-on, for example, 61.

21. :SYSTem:ERRor?

Syntax	:SYSTem:ERRor?
Function	The query returns the message in the error queue, for example, -113, "Undefined header; keyword cannot be found". If there is no error message, the query returns 0, "No error" (with quotation marks).

22. :SYSTem:VERSion?

Syntax	:SYSTem:VERSion?
Function	The query returns the version number of SCPI commands: 1999.0.

:UTILity Commands

The commands are used to control and test the communication of the instrument. Before controlling the communication, make sure that the related communication interface has been connected stably; otherwise, abnormalities or errors might occur. The commands mainly include:

● :UTILity:INTErface:LAN:DHCP*
● :UTILity:INTErface:LAN:AUTOip*
● :UTILity:INTErface:LAN:MANUip*
● :UTILity:INTErface:LAN:IP*
● :UTILity:INTErface:LAN:MASK*
● :UTILity:INTErface:LAN:GATEway*
● :UTILity:INTErface:LAN:DNS*
● :UTILity:INTErface:GPIB:ADDRess*
● :UTILity:INTErface:RS232:BAUD
● :UTILity:INTErface:RS232:PARIty
● :UTILity:INTErface:USB:ID?

Note: commands marked with * are only applicable to DM3064, DM3062, DM3054 and DM3052.

1.	:UTILity:INTErface:LAN:DHCP
Syntax	:UTILity:INTErface:LAN:DHCP?
	:UTILity:INTErface:LAN:DHCP {ON|OFF|1|0}
Function	Enable or disable the DHCP setting.
	The query returns ON or OFF.
Explanation	The three modes (DHCP, Auto IP and Manual IP) are not permitted
	be disabled at the same time.
Default	ON

2.	:UTILity:INTErface:LAN:AUTOip
Syntax	:UTILity:INTErface:LAN:AUTOip?
	:UTILity:INTErface:LAN:AUTOip {ON|OFF|1|0}
Function	Enable or disable the AutoIP setting.
	The query returns ON or OFF.
Explanation	The three modes (DHCP, Auto IP and Manual IP) are not permitted
	be disabled at the same time.
Default	ON

3.	:UTILity:INTErface:LAN:MANUip
Syntax	:UTILity:INTErface:LAN:MANUip?
	:UTILity:INTErface:LAN:MANUip {ON|OFF|1|0}
Function	Enable or disable the ManualIP setting.
Explanation	The three modes (DHCP, Auto IP and Manual IP) are not permitted
	be disabled at the same time.
Default	OFF

4.	:UTILity:INTErface:LAN:IP
Syntax	:UTILity:INTErface:LAN:IP?
	:UTILity:INTErface:LAN:IP <ip_address>
Function	Users define the IP address of the multimeter.
Explanation	• The format of <ip_address> is "nnn.nnn.nnn.nnn". The first
	"nnn" ranges from 0 to 223 (except 127) and the others range
	from 0 to 255.
	• The IP address configuration type should be Manual and both
	DHCP and AutoIP should be disabled when you use this
	command.

5. :UTILity:INTErface:LAN:MASK	
Syntax	:UTILity:INTErface:LAN:MASK?
	:UTILity:INTErface:LAN:MASK *<ip_address>*
Function	Users define the subnet mask of the network currently connected to the multimeter.
Explanation	• The format of *<ip_address>* is "nnn.nnn.nnn.nnn" and all "nnn" range from 0 to 255.
	• The IP address configuration type should be Manual and both DHCP and AutoIP should be disabled when you use this command.

6. :UTILity:INTErface:LAN:GATEway	
Syntax	:UTILity:INTErface:LAN:GATEway?
	:UTILity:INTErface:LAN:GATEway *<ip_address>*
Function	Users define the gateway of the network currently connected to the multimeter.
Explanation	• The format of *<ip_address>* is "nnn.nnn.nnn.nnn". The first "nnn" ranges from 0 to 223 (except 127) and the others range from 0 to 255.
	• The IP address configuration type should be Manual and both DHCP and AutoIP should be disabled when you use this command.

7. :UTILity:INTErface:LAN:DNS	
Syntax	:UTILity:INTErface:LAN:DNS?
	:UTILity:INTErface:LAN:DNS *<ip_address>*
Function	Users define the DNS server address of the network currently connected to the multimeter.
Explanation	• The format of *<ip_address>* is "nnn.nnn.nnn.nnn". The first "nnn" ranges from 0 to 223 (except 127) and the others range from 0 to 255.
	• The IP address configuration type should be Manual and both DHCP and AutoIP should be disabled when you use this command.

8. :UTILity:INTErface:GPIB:ADDRess	
Syntax	:UTILity:INTErface:GPIB:ADDRess?

	:UTILity:INTErface:GPIB:ADDRess *<value>*
Function	Set the GPIB address of the multimeter.
Explanation	*<value>* is an integer ranging from 1 to 30.
Default	7

9. :UTILity:INTErface:RS232:BAUD	
Syntax	:UTILity:INTErface:RS232:BAUD?
	:UTILity:INTErface:RS232:BAUD
	{1200|2400|4800|9600|19200|38400|57600|115200}
Function	Set the baud rate of RS232 interface.
	The query returns 1200, 2400, 4800, 9600, 19200, 38400, 57600
	or 115200.
Default	9600

10. :UTILity:INTErface:RS232:PARIty	
Syntax	:UTILity:INTErface:RS232:PARIty?
	:UTILity:INTErface:RS232:PARIty {NONE|ODD|EVEN}
Function	Set the parity check type of RS232 interface.
	The query returns NONE_8BIT, ODD_7BIT or EVEN_7BIT.
Explanation	● NONE: no parity, 8 data bits.
	● ODD: odd parity, 7 data bits.
	● EVEN: even parity, 7 data bits.
Default	NONE

11. :UTILity:INTErface:USB:ID?	
Syntax	:UTILity:INTErface:USB:ID?
Function	The query returns the ID information of the USB interface, for
	example, usb0::1ab1::09c4.

:TRIGger Commands

The commands are used to set the trigger system parameters. The commands include:

- :TRIGger:SOURce
- :TRIGger:AUTO:INTErval
- :TRIGger:AUTO:HOLD
- :TRIGger:AUTO:HOLD:SENSitivity
- :TRIGger:SINGle
- :TRIGger:SINGle:TRIGger
- :TRIGger:EXT
- :TRIGger:VMComplete:POLAr
- :TRIGger:VMComplete:PULSewidth

1. :TRIGger:SOURce	
Syntax	:TRIGger:SOURce?
	:TRIGger:SOURce {AUTO|SINGLE|EXT}
Function	Set the trigger source of the measurement to AUTO, SINGLE or EXT.
	The query returns AUTO, SINGLE or EXT.
Default	AUTO

2. :TRIGger:AUTO:INTErval	
Syntax	:TRIGger:AUTO:INTErval?
	:TRIGger:AUTO:INTErval *<value>*
Function	Set the display interval of the multimeter. The default unit is ms.
	The query returns the interval with the unit (ms).
Explanation	The range of *<value>* is related to the current reading resolution.

DM306x		
Reading resolution	**<value>**	**Default**
4 ½ (ACV/ACI, 3 ½)	30 ms - 7000 ms	30 ms
5 ½	200 ms - 7000 ms	200 ms
ACV/ACI, 4 ½	300 ms - 7000 ms	300 ms
6 ½ (ACV/ACI, 5 ½)	400 ms - 7000 ms	400 ms

DM305x		
Reading resolution	**<value>**	**Default**
3 ¾ (ACV/ACI/DCI, 3 ½)	30 ms - 7000 ms	30 ms
4 ¾ (DCI, 4 ½)	200 ms - 7000 ms	200 ms
ACV/ACI, 4 ½	300 ms - 7000 ms	300 ms
5 ¾ (ACV/ACI/DCI, 5 ½)	400 ms - 7000 ms	400 ms

Example	Set the interval to 1000 ms:
	:TRIGger:AUTO:INTErval 1000
	The query returns 1000 ms.

3. :TRIGger:AUTO:HOLD	
Syntax	:TRIGger:AUTO:HOLD?

	:TRIGger:AUTO:HOLD {ON|OFF|1|0}
Function	Enable or disable the auto trigger delay function.
	The query returns ON or OFF.
Default	OFF

4.　:TRIGger:AUTO:HOLD:SENSitivity	
Syntax	:TRIGger:AUTO:HOLD:SENSitivity?
	:TRIGger:AUTO:HOLD:SENSitivity {0|1|2|3|MIN|MAX|DEF}
Function	Set the sensitivity of the auto trigger delay.
	The query returns 0, 1, 2 or 3.
Explanation	The sensitivity corresponding to each parameter is as follows.

Value	Sensitivity
0	0.01%
1	0.1%
2	1%
3	10%
MAX	10%
MIN	0.01%
DEF	0.1%

5.　:TRIGger:SINGle	
Syntax	:TRIGger:SINGle?
	:TRIGger:SINGle {*<value>*|MIN|MAX|DEF}
Function	Set the number of samples for single trigger.
Explanation	● 　*<value>* ranges from 1 to 1000.
	● 　The "DEF" is 1.

6.　:TRIGger:SINGle:TRIGger	
Syntax	:TRIGger:SINGle:TRIGger
Function	Execute single trigger.
Explanation	First, select the single trigger source using the **:TRIGger:SOURce**
	SINGLE command; otherwise, this command is invalid.

7.　:TRIGger:EXT	
Syntax	:TRIGger:EXT?
	:TRIGger:EXT {RISE|FALL}
Function	Set the external trigger type to RISE or FALL.

	The query returns RISE or FALL.
Default	RISE

8. :TRIGger:VMComplete:POLAr

Syntax	:TRIGger:VMComplete:POLAr?
	:TRIGger:VMComplete:POLAr {POSitive|NEGative}
Function	Set the polarity of the VMC output at the rear panel.
	The query returns POSITIVE or NEGATIVE.
Default	POSitive

9.   :TRIGger:VMComplete:PULSewidth

Syntax	:TRIGger:VMComplete:PULSewidth?
	:TRIGger:VMComplete:PULSewidth *<value>*
Function	Set the pulse width of the VMC output at the rear panel. The default
	unit is ms.
	The query returns the pulse width.
Explanation	The range of *<value>* is related to the current reading resolution.

DM306x	
Reading resolution	**<value>**
4 ½ (ACV/ACI, 3 ½)	1 ms - 29 ms
5 ½ (ACV/ACI, 4 ½)	1 ms - 199 ms
6 ½ (ACV/ACI, 5 ½)	1 ms - 399 ms

DM305x	
Reading resolution	**<value>**
3 ¾ (ACV/ACI/DCI, 3 ½)	1 ms - 29 ms
4 ¾ (ACV/ACI/DCI, 4 ½)	1 ms - 199 ms
5 ¾ (ACV/ACI/DCI, 5 ½)	1 ms - 399 ms

Example	Set the pluse width to 100 ms:
	:TRIGger:VMComplete:PULSewidth 100
	The query returns 100.

:CALCulate Commands

The commands are used to set the calculation parameters of the instrument. The commands include:

- :CALCulate:FUNCtion
- :CALCulate:STATistic:MIN?
- :CALCulate:STATistic:MAX?
- :CALCulate:STATistic:AVERage?
- :CALCulate:STATistic:COUNt?
- :CALCulate:STATistic:STATe
- :CALCulate:NULL:STATe
- :CALCulate:NULL:OFFSet
- :CALCulate:DB:STATe
- :CALCulate:DB?
- :CALCulate:DB:REFErence
- :CALCulate:DBM:STATe
- :CALCulate:DBM?
- :CALCulate:DBM:REFErence
- :CALCulate:LIMIt:STATe
- :CALCulate:LIMIt?
- :CALCulate:LIMIt:LOWEr
- :CALCulate:LIMIt:UPPEr

1. :CALCulate:FUNCtion	
Syntax	:CALCulate:FUNCtion? :CALCulate:FUNCtion {NONE|NULL|DB|DBM|MIN|MAX|AVERAGE|TOTAL|LIMIT}
Function	Select the math operation function. The query returns the current operation function, for example, NULL.
Explanation	The definition of each parameter is as follows. For math operations not supported by the current measurement function, the multimeter does not support the corresponding commands.

Value	Explanation	Remark
NONE	Disable the math operation function	Supported by all the functions
NULL	NULL operation	Not supported by continuity and diode measurement functions
DB	dB operation	Only supported by DCV and ACV
DBM	dBm operation	Only supported by DCV and ACV
MIN	minimum operation	Not supported by continuity and diode measurement functions
MAX	maximum operation	Not supported by continuity and diode measurement functions
AVERAGE	average operation	Not supported by continuity and diode measurement functions
TOTAL	total operation	Not supported by continuity and diode measurement functions
LIMIT	limit operation	Not supported by continuity and diode measurement functions

Default	NONE

2. :CALCulate:STATistic:MIN?	
Syntax	:CALCulate:STATistic:MIN?
Function	The query returns the current minimum value of the statistic operation in scientific notation, for example, +2.46002004E-04.

3. :CALCulate:STATistic:MAX?	
Syntax	:CALCulate:STATistic:MAX?
Function	The query returns the current maximum value of the statistic operation in scientific notation, for example, +2.90388033E-04.

4. :CALCulate:STATistic:AVERage?	
Syntax	:CALCulate:STATistic:AVERage?
Function	The query returns the current average value of the statistic operation in scientific notation, for example, +2.68113537E-04.

5. :CALCulate:STATistic:COUNt?	
Syntax	:CALCulate:STATistic:COUNt?
Function	The query returns the number of measurements used in the current statistic operation in scientific notation, for example, +3.13000000E+02.

6. :CALCulate:STATistic:STATe	
Syntax	:CALCulate:STATistic:STATe? :CALCulate:STATistic:STATe {ON|OFF|1|0}
Function	Enable or disable the statistic operation funtion. The query returns ON if any statistic function (MAX, MIN or Average) is enabled currently and returns OFF if all of the statistic functions are disabled.
Default	OFF

7. :CALCulate:NULL:STATe	
Syntax	:CALCulate:NULL:STATe? :CALCulate:NULL:STATe {ON|OFF|1|0}
Function	Enable or disable the Null operation function. The query returns ON or OFF.

8. :CALCulate:NULL:OFFSet	

Syntax	:CALCulate:NULL:OFFSet?
	:CALCulate:NULL:OFFSet {*<range>*|MIN|MAX|DEF}
Function	Set the offset of Null operation.
	The query returns the offset of Null operation under the current
	measurement function in scientific notation.
Explanation	● The offset value can hold seven digits after the decimal point.
	● The range of *<range>* is different for different measurement
	function.

Measurement	<range>	Default	Unit
DC voltage	±1200	0	V
AC voltage	±900	0	V
DC current	±12	0	A
AC current	±12	0	A
Resistance	±1.2e+08	0	Ω
Capacitance	±2.4e-04	0	F
Frequency	3 - 3.0e+05	0	Hz

Example	Set the offset of Null operation under DC voltage measurement to
	10.2010031V:
	:CALCulate:NULL:OFFSet 10.2010031
	The query returns: +1.02010031e+01.

9. :CALCulate:DB:STATe
Syntax	:CALCulate:DB:STATe?
	:CALCulate:DB:STATe {ON|OFF|1|0}
Function	Enable or disable the dB operation function.
	The query returns ON or OFF.
Default	OFF

9. :CALCulate:DB:STATe	
Syntax	:CALCulate:DB:STATe?
	:CALCulate:DB:STATe {ON|OFF|1|0}
Function	Enable or disable the dB operation function.
	The query returns ON or OFF.
Default	OFF

10. :CALCulate:DB?	
Syntax	:CALCulate:DB?
Function	The query returns the dB measurement value in scientific notation, for
	example, -4.14956621e+01.
Explanation	dB operation function must be enabled before sending this command.

11. :CALCulate:DB:REFErence	
Syntax	:CALCulate:DB:REFErence?
	:CALCulate:DB:REFErence {*<range>*|MIN|MAX|DEF}

Function	Set the reference value of dB operation and the unit is dBm. The query returns an integer.
Explanation	● *<range>* can be any integer ranging from -120 to +120. ● The "DEF" is 0.

12. :CALCulate:DBM:STATe	
Syntax	:CALCulate:DBM:STATe? :CALCulate:DBM:STATe {ON|OFF|1|0}
Function	Enable or disable the dBm operation function. The query returns ON or OFF.
Default	OFF

13. :CALCulate:DBM?	
Syntax	:CALCulate:DBM?
Function	The query returns the dBm measurement value in scientific notation, for example, -4.15457917E+01.
Explanation	dBm operation function must be enabled before sending this command.

14. :CALCulate:DBM:REFErence	
Syntax	:CALCulate:DBM:REFErence? :CALCulate:DBM:REFErence {*<range>*|MIN|MAX|DEF}
Function	Set the reference resistance of dBm operation and the unit is Ω. The query returns an integer.
Explanation	● *<range>* can be any integer ranging from 2 to 8000. ● The "DEF" is 600.

15. :CALCulate:LIMIt:STATe	
Syntax	:CALCulate:LIMIt:STATe? :CALCulate:LIMIt:STATe {ON|OFF|1|0}
Function	Enable or disable the Limit operation function. The query returns ON or OFF.
Default	OFF

16. :CALCulate:LIMIt?	
Syntax	:CALCulate:LIMIt?
Function	Query the current Limit operation result.

	The query returns PASS or FAIL.
Explanation	Limit operation function must be enabled before sending this command.

17. :CALCulate:LIMIt:LOWEr

Syntax	:CALCulate:LIMIt:LOWEr?
	:CALCulate:LIMIt:LOWEr {*<range>*|MIN|DEF}
Function	Set the lower limit of Limit operation.
	The query returns the lower limit of Limit operation under the current measurement function in scientific notation.
Explanation	● The lower limit should not be greater than the upper limit. For more details, refer to **:CALCulate:LIMIt:UPPEr**.
	● The range of *<range>* depends on the current measurement function.

Measurement	<range>	Default	Unit
DC voltage	±1200	0	V
AC voltage	0 - 900	0	V
DC current	±12	0	A
AC current	0 - 12	0	A
Resistance	0 - 1.2e+08	0	Ω
Capacitance	0 - 2.4e-04	0	F
Frequency	3 - 3.0e+05	3	Hz
Period	3.0e-06 - 3.0e-01	3.0e-06	s
Ratio	±1.0e+09	-1.0e+09	

18. :CALCulate:LIMIt:UPPEr

Syntax	:CALCulate:LIMIt:UPPEr?
	:CALCulate:LIMIt:UPPEr {*<range>*|MAX|DEF}
Function	Set the upper limit of Limit operation.
	The query returns the upper limit of Limit operation under the current measurement function in scientific notation.
Explanation	● The upper limit should not be lower than the lower limit. For more details, refer to **:CALCulate:LIMIt:LOWEr**.
	● The range of *<range>* depends on the current measurement function.

Measurement	Range	Default	Unit
DC voltage	±1200	1	V

	AC voltage	0 - 900	1	V
	DC current	±12	1	A
	AC current	0 - 12	1	A
	Resistance	0 - 1.2e+08	1	Ω
	Capacitance	0 - 2.4e-04	1	F
	Frequency	3 - 3.0e+05	3.0e+05	Hz
	Period	3.0e-06 - 3.0e-01	3.0e-01	s
	Ratio	±1.0e+09	0	

:DATAlog Commands

The commands are used to set the datalog parameters of the instrument. The
commands include:

- :DATAlog:CONFigure?
- :DATAlog:CONFigure:FUNCtion
- :DATAlog:CONFigure:STARtmode
- :DATAlog:CONFigure:STARtmode:AUTO
- :DATAlog:CONFigure:STARtmode:EXTern
- :DATAlog:CONFigure:STARtmode:DELAytime
- :DATAlog:CONFigure:STOPmode:TIME
- :DATAlog:CONFigure:STOPmode:NUMber
- :DATAlog:CONFigure:RATE
- :DATAlog:RUN
- :DATAlog:RUN?
- :DATAlog:STOP
- :DATAlog:DATA?

Note: the commands are only available for DM3054 and DM3064 with software
version 03.12.00.03.04.00.07 or higher.

1. :DATAlog:CONFigure?	
Syntax	:DATAlog:CONFigure?
Function	The query returns the configuration information of the current data acquisition task, including the measurement function, range and resolution (separated by commas ","), for example, DCV,0,2.
Explanation	● The Datalog function must be enabled (can only be enabled under DCV, DCI, 2WR and 4WR measurement functions) before sending this command. ● The returnd measurement function should be DCV, DCI, RES or FRES. ● For the definition of the range in the return value, please refer to the "**Explanation**" in **:MEASure** command set.

2. :DATAlog:CONFigure:FUNCtion	
Syntax	:DATAlog:CONFigure:FUNCtion? :DATAlog:CONFigure:FUNCtion {<DCV|DCI|RESistance|FRESistance>,<range>}
Function	Set the measurement function that needs to acquire data and its range.
Explanation	The lower limit of <range> is 0. The upper limit is related to the measurement function: DCV and DCI: 4; RESistance and FRESistance: 6.
Example	Set the DC voltage measurement function and select 20 V range: :DATAlog:CONFigure:FUNCtion DCV,2 The query returns DCV,2.

3. :DATAlog:CONFigure:STARtmode?	
Syntax	:DATAlog:CONFigure:STARtmode?
Function	Query the current start mode (auto or external) of the Datalog function. The query returns AUTO or EXTERN.

4. :DATAlog:CONFigure:STARtmode:AUTO	
Syntax	:DATAlog:CONFigure:STARtmode:AUTO
Function	Set the start mode of the current Datalog function to Auto.

5. :DATAlog:CONFigure:STARtmode:EXTern	

Syntax	:DATAlog:CONFigure:STARtmode:EXTern
Function	Set the start mode of the current Datalog function to External.
Explanation	The instrument enters wait-for-trigger state after recieving this command and starts the data acquisition when trigger signal is recieved.

6.   :DATAlog:CONFigure:STARtmode:DELAytime

Syntax	:DATAlog:CONFigure:STARtmode:DELAytime?
	:DATAlog:CONFigure:STARtmode:DELAytime *<value>*
Function	Set the delay time for Auto Datalog and the unit is s. The query returns an integer.
Explanation	*<value>* can be any integer ranging from 0 to 3600.

7.   :DATAlog:CONFigure:STOPmode:TIME

Syntax	:DATAlog:CONFigure:STOPmode:TIME?
	:DATAlog:CONFigure:STOPmode:TIME *<value>*
Function	Set the duration of data acquisition. The data acquisition stops automatically when the specified time is reached. The query returns an integer.
Explanation	The range of *<value>* is relevant with the sample rate and the largest range is from 1 to 2097150 and the unit is s.

8.   :DATAlog:CONFigure:STOPmode:NUMber

Syntax	:DATAlog:CONFigure:STOPmode:NUMber?
	:DATAlog:CONFigure:STOPmode:NUMber *<value>*
Function	Set the number of data acquisitions. The data acquisition stops automatically when the specified sample number is reached. The query returns an integer.
Explanation	*<value>* can be any integer ranging from 1 to 2097151.

9.   :DATAlog:CONFigure:RATE

Syntax	:DATAlog:CONFigure:RATE?
	:DATAlog:CONFigure:RATE *<range>*
Function	Set the sample rate of data acquisition.
Explanation	*<range>* ranges from 1 to 13 and the sample rate and return value corresponding to each range are as follows:

<range>	Sample rate (number of samples/time)	Return value
1	1/10 m	1/10MIN
2	1/5 m	1/5MIN
3	1/m	1/1MIN
4	1/10 s	1/10SEC
5	1/s	1/SEC
6	10/s	10/SEC
7	50/s	50/SEC
8	100/s	100/SEC
9	833/s	833/SEC
10	1 k/s	1000/SEC
11	5 k/s	5000/SEC
12	10 k/s	10000/SEC
13	50 k/s	50000/SEC

10. :DATAlog:RUN

Syntax	:DATAlog:RUN
Function	Execute the configured data acquisition task.

11. :DATAlog:RUN?

Syntax	:DATAlog:RUN?
Function	Query the state of the current data acquisition. The query returns RUN or STOP.

12. :DATAlog:STOP

Syntax	:DATAlog:STOP
Function	Stop the data acquisition.

13. :DATAlog:DATA?

Syntax	:DATAlog:DATA? *<value1>,<value2>*
Function	The query returns specified number of acquired data starting from the specified number.
Explanation	● The acquired data are numbered from 1 on and saved after the start of acquisition. ● *<value1>* defines the start position of the returned data. ● *<value2>* defines the number of data (within 1 and 100) to be

	returned.
Example	Query and return three data starting from number 2:
	:DATAlog:DATA? 2,3
	The query returns
	-7.03334892e-02,-7.45058149e-02,-7.24196520e-02.

:SCAN Commands

The commands are used to set the scan parameters for the instrument. The commands include:

- :SCAN:PROJect?
- :SCAN:PROJect:CREAte
- :SCAN:PROJect:CURRently:CYCLe?
- :SCAN:TASK:ADD
- :SCAN:TASK:DELEte
- :SCAN:TASK:INTErval
- :SCAN:TASK:LIST?
- :SCAN:RUN?
- :SCAN:RUN
- :SCAN:STOP
- :SCAN:DATA?
- :SCAN:CARDid?

Note: the commands are only available for DM3054 and DM3064 with software version 03.12.00.03.04.00.07 or higher.

1.	:SCAN:PROJect?
Syntax	:SCAN:PROJect?
Function	Query the name of the scan project currently created. When there is no scan project, the query returns NULL.

2.	:SCAN:PROJect:CREAte
Syntax	:SCAN:PROJect:CREAte? :SCAN:PROJect:CREAte *<name>*
Function	Create a scan project with the specified name. Query whether a task has been created for the current scan project. The query returns True if an available task exists; otherwise, returns False.
Explanation	*<name>* should be composed of letters a - z, A - Z and numbers within 0 and 9 and its length can not exceed 15 characters.

3.	:SCAN:PROJect:CURRently:CYCLe?
Syntax	:SCAN:PROJect:CURRently:CYCLe?
Function	Query the number of cycles of the current scan project. The query returns an integer.
Explanation	Refer to **:SCAN:RUN** to set the number of cycles and run the scan project.

4.	:SCAN:TASK:ADD
Syntax	:SCAN:TASK:ADD{<TaskNum>,<Channel>,<Function>,<Range>, <Resolution>,<SalmpleNum>,<Delay>}
Function	Add a task to the current scan project.
Explanation	● <TaskNum>: the task number and itsrange is from 0 to 99. If the tasks previous to this task are not added, the multimeter will automatically add these tasks using the current configurations. ● <Channel>: the scan channel currently used by this task and its range is from 1 to 16. Wherein, for DCV, ACV, 2WR, FREQ, PERI, CAP and DIODE, channel 1 to channel 12 can be used; while, for DCI and ACI, channel 13 to channel 16 can be used. ● <Function>: the measurement function currently used by this task and it can be DCV|ACV|DCI|ACI|RESistance|DIODe|CAPacitance|PERIod|FRE

	Quency.
	● <Range>: the measurement range of the current task. It can be AUTO|0|1|2|3|4|5|6; wherein, AUTO denotes auto range measurement; for more details about parameters 0 to 6, please refer to the "**Explanation**" in **:MEASure** command set. ● <Resolution>: the measurement reading resolution of the current task and it can be 0|1|2. ● <SalmpleNum>: the number of samples of the current task and its range is from 1 to 100. ● <Delay>: the interval among samples of the current task and its range is from 0 to 360000. The default unit is s.
Example	:SCAN:TASK:ADD 2,5,DCV,2,1,25,10

5. :SCAN:TASK:DELEte	
Syntax	:SCAN:TASK:DELEte <TasNum>
Function	Delete the task specified by <TasNum>.
Explanation	<TasNum> ranges from 0 to the maximum task number in the current scan project.

6. :SCAN:TASK:INTErval	
Syntax	:SCAN:TASK:INTErval <time>
Function	Set the interval between tasks in a scan project and the default unit is s.
Explanation	<time> ranges from 0 to 3600.

7. :SCAN:TASK:LIST?	
Syntax	:SCAN:TASK:LIST?
Function	The query returns the information of the scan task currently created. For example, 00:CH05,DCV,3,1,25;01:CH05,DCV,3,1,25;02:CH05,DCV,3,1,25; If no task is available under the current scan project, the query returns NULL.

8. :SCAN:RUN?	
Syntax	:SCAN:RUN?
Function	Query the running state of the current scan task. The query returns RUN or STOP.

9. :SCAN:RUN	
Syntax	:SCAN:RUN <Cycles>
Function	Set the number of cycles of the scan task and run the task.
Explanation	<Cycles> ranges from 1 to 10000.

10. :SCAN:STOP	
Syntax	:SCAN:STOP
Function	Stop the current scan task.

11. :SCAN:DATA?	
Syntax	:SCAN:DATA? *<value1>,<value2>*
Function	The query returns the specified number of scan data starting from the specified number.
Explanation	● The scan data are numbered from 1 on and saved after the start of scan. ● *<value1>* defines the start position of the returned data. ● *<value2>* defines the number of data (within 1 and 100) to be returned.
Example	Query and return the three data starting from number 2: :SCAN:DATA? 2,3 The query returns: 1.36941690e-02, 1.36941690e-02, 1.36941690e-02

12. :SCAN:CARDid?	
Syntax	:SCAN:CARDid?
Function	Query the version of the scan board currently installed, for example, "MultCard 2.1". The query returns NONE if no scan board is installed.

Chapter 3   Commands Compatibility

DM3000 series digital multimeter not only supports **RIGOL** commands system, but is also compatible with some remote control commands of Agilent and Fluke multimeters. If you are familiar with Agilent and Fluke remote control commands, you can control **RIGOL** DM3000 conveniently.

This chapter lists the remote control commands of Agilent and Fluke multimeters supported by DM3000 series digital multimeter for easy reference of users. For the detailed meaning of commands and operation methods, please refer to the related commands introduction.

- Agilent Commands Compatibility
- Fluke Commands Compatibility

Agilent Commands Compatibility

The table below lists the Agilent commands supported by **RIGOL** DM3000 series digital multimeter. Before using the commands, please select the Agilent command set using the **CMDSet** command (send the CMDSet AGILENT command). For more details on this command, please refer to the "Command Set Introduction" in Chapter 1.

Note: the functions of the Agilent commands in **RIGOL** DM3000 series digital multimeter are listed in the "Function" column in the table below.

Agilent Command	Function
CALCulate:AVERage:AVERage?	Query the average of all the data in the statistic operation.
CALCulate:AVERage:CLEar	Disable the statistic function.
CALCulate:AVERage:COUNt?	Query the number of statistic data.
CALCulate:AVERage:MAXimum?	Query the maximum of the statistic data.
CALCulate:AVERage:MINimum?	Query the minimum of the statistic data.
CALCulate:AVERage:PTPeak?	Query the peak-peak value of the statistic data.
CALCulate:AVERage:SDEViation?	Query the standard deviation of the statistic data.
CALCulate:DB:REFerence? {MINimun|MAXimun} CALCulate:DB:REFerence {<value>|MINimum|MAXimum}	Query and set the dB reference value.
CALCulate:DBM:REFerence? {MINimun|MAXimun} CALCulate:DBM:REFerence {<value>|MINimum|MAXimum}	Query and set the dBm reference value.
CALCulate:FUNCtion? CALCulate:FUNCtion {NULL|DB|DBM|AVERage|LIMit}	Query and set the math operation function.
CALCulate:LIMit:LOWer? {MINimum|MAXimum} CALCulate:LIMit:LOWer {<value>|MINimum}	Query and set the lower limit of the current measurement function.
CALCulate:LIMit:UPPer?	Query and set the upper limit of the current

{MINimum|MAXimum} CALCulate:LIMit:UPPer {<value>|MAXimum}	measurement function.
CALCulate:NULL:OFFSet? {MINimum|MAXimum} CALCulate:NULL:OFFSet {<value>|MINimum|MAXimum}	Query and set the offset of NULL operation.
CALCulate:STATe?	Query the state of the operation selected using the CALCulate:FUNCtion command.
CONFigure?	Query the current configuration of the instrument.
CONFigure:CAPacitance [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the capacitance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for capacitance measurement.
CONFigure:CONTinuity	Restore all the continuity measurement parameters and trigger parameters to their defaults, and then configure the multimeter for continuity measurement.
CONFigure:CURRent:AC [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the AC current measurement parameters and trigger parameters to their defaults, and then configure the multimeter for AC current measurement.
CONFigure:CURRent[:DC] [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the DC current measurement parameters and trigger parameters to their defaults, and then configure the multimeter for DC current measurement.
CONFigure:DIODe	Restore all the diode measurement parameters and trigger parameters to their defaults, and then configure the multimeter for diode measurement.
CONFigure:FREQuency [{<range>|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the frequency measurement parameters and trigger parameters to their defaults, and then configure the multimeter for frequency measurement.
CONFigure:FRESistance [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the 4-wire resistance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for 4-wire resistance measurement.

CONFigure:PERiod [{<range>|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the period measurement parameters and trigger parameters to their defaults, and then configure the multimeter for period measurement.
CONFigure:RESistance [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the 2-wire resistance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for 2-wire resistance measurement.
CONFigure[:VOLTage]:AC [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the AC voltage measurement parameters and trigger parameters to their defaults, and then configure the multimeter for AC voltage measurement.
CONFigure[:VOLTage][:DC] [{<range>|AUTO|MIN|MAX|DEF}[,{<resolution>|MIN|MAX|DEF}]]	Restore all the DC voltage measurement parameters and trigger parameters to their defaults, and then configure the multimeter for DC voltage measurement.
DATA:COPY	Save the history measurement data into "File 10" under "MeasData" in the nonvolatile memory of the instrument with the name "MeasData".
DATA:DELete NVMEM	Delete the data saved in the nonvolatile memory using the command "DATA:COPY".
DATA:LAST?	Query the latest measurement result.
DATA:POINts? [{RDG_STORE|MNMEM}]	Query the current number of measurement values. This number corresponds to the number of measurements shown in the measurement history.
FETCh?	Query the data in the output buffer of the instrument and read them into the PC.
FETCh:CURRent:AC:PTPeak?	Query the difference between the maximum and minimum AC transient currents. **Note:** this command is only available in AC current measurement function when the statistic function is enabled.
FETCh:CURRent[:DC]:PEAK:MAXimum?	Query the maximum DC transient current in DC current measurement. **Note:** this command is only available in DC current measurement function when the statistic function is enabled.
FETCh:CURRent[:DC]:PEAK:MINimum?	Query the minimum DC transient current in DC

	current measurement. **Note:** this command is only available in DC current measurement function when the statistic function is enabled.
FETCh:CURRent[:DC]:PTPeak?	Query the difference between the maximum and minimum DC transient currents. **Note:** this command is only available in DC current measurement function when the statistic function is enabled.
FETCh:VOLTage:AC:PTPeak?	Query the difference between the maximum and minimum AC transient voltages. **Note:** this command is only available in AC voltage measurement function when the statistic function is enabled.
FETCh:VOLTage[:DC]:PEAK:MAXimum?	Query the maximum DC transient voltage in DC voltage measurement. **Note:** this command is only available in DC voltage measurement function when the statistic function is enabled.
FETCh:VOLTage[:DC]:PEAK::MINimum?	Query the minimum DC transient voltage in DC voltage measurement. **Note:** this command is only available in DC voltage measurement function when the statistic function is enabled.
FETCh:VOLTage[:DC]:PTPeak?	Query the difference between the maximum and minimum DC transient voltages. **Note:** this command is only available in DC voltage measurement function when the statistic function is enabled.
[SENSe:]CAPacitance:NULL[:STATe]? [SENSe:]CAPacitance:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of capacitance measurement.
[SENSe:]CAPacitance:NULL:VALue? [{MIN|MAX}] [SENSe:]CAPacitance:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of capacitance measurement.
[SENSe:]CAPacitance:RANGe:AUTO?	Query and set the state of the auto range function

[SENSe:]CAPacitance:RANGe:AUTO \<mode\>	of capacitance measurement.
[SENSe:]CAPacitance:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]CAPacitance:RANGe[:UPPer] {\<range\>|MIN|MAX|DEF}	Query and set the range of capacitance measurement.
[SENSe:]CURRent:AC:BANDwidth? [{MIN|MAX}] [SENSe:]CURRent:AC:BANDwidth {\<filter\>|MIN|MAX|DEF}	Query the filter bandwidth of AC current measurement and the query returns the boundary value of the bandwidth (3, 20 or 200). Set the filter bandwidth of AC current measurement and \<filter\> could be 3, 20 or 200.
[SENSe:]CURRent:AC:NULL[:STATe]? [SENSe:]CURRent:AC:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of AC current measurement.
[SENSe:]CURRent:AC:NULL:VALue? [{MIN|MAX}] [SENSe:]CURRent:AC:NULL:VALue {\<value\>|MIN|MAX}	Query and set the NULL value of AC current measurement.
[SENSe:]CURRent:AC:PEAK:STATe? [SENSe:]CURRent:AC:PEAK:STATe {ON|OFF}	Query and set the state of the peak-peak measurement function of AC current measurement. **Note:** DM3000 only receives this command but does not support the peak-peak measurement function.
[SENSe:]CURRent:AC:RANGe:AUTO? [SENSe:]CURRent:AC:RANGe:AUTO \<mode\>	Query and set the state of the auto range function of AC current measurement.
[SENSe:]CURRent:AC:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]CURRent:AC:RANGe[:UPPer] {\<range\>|MIN|MAX|DEF}	Query and set the range of AC current measurement.
[SENSe:]CURRent[:DC]:APERture? [{MIN|MAX}] [SENSe:]CURRent[:DC]:APERture {\<second\>|MIN|MAX|DEF}	Query and set the aperture time of DC current measurement. **Note:** DM3000 only receives this command but does not respond to it.
[SENSe:]CURRent[:DC]:NPLC? [{MIN|MAX}] [SENSe:]CURRent[:DC]:NPLC {\<PLCs\>|MIN|MAX|DEF}	Query and set the integral time of DC current measurement. The input value and return value are both multiples of PLC. **Note:** DM3000 only receives this command but

	does not support the NPLC value setting function.
[SENSe:]CURRent[:DC]:NULL[:STATe]? [SENSe:]CURRent[:DC]:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of DC current measurement.
[SENSe:]CURRent[:DC]:NULL:VALue? [{MIN|MAX}] [SENSe:]CURRent[:DC]:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of DC current measurement.
[SENSe:]CURRent[:DC]:PEAK:STATe? [SENSe:]CURRent[:DC]:PEAK:STATe {ON|OFF}	Query and set the state of the peak-peak measurement function of DC current measurement. **Note:** DM3000 only receives the command but does not support the peak-peak measurement function.
[SENSe:]CURRent[:DC]:RANGe:AUTO? [SENSe:]CURRent[:DC]:RANGe:AUTO <mode>	Query and set the state of the auto range function of DC current measurement.
[SENSe:]CURRent[:DC]:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]CURRent[:DC]:RANGe[:UPPer] {<range>|MIN|MAX|DEF}	Query and set the range of DC current measurement.
[SENSe:]CURRent[:DC]:RESolution? [{MIN|MAX}] [SENSe:]CURRent[:DC]:RESolution {<resolution>|MIN|MAX|DEF}	Query and set the reading resolution of DC current measurement.
[SENSe:]FREQuency:APERture? [{MIN|MAX}] [SENSe:]FREQuency:APERture {<second>|MIN|MAX|DEF}	Query and set the aperture time of frequency measurement. **Note:** DM3000 only receives the command but does not respond to it.
[SENSe:]FREQuency:NULL[:STATe]? [SENSe:]FREQuency:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of frequency measurement.
[SENSe:]FREQuency:NULL:VALue? [{MIN|MAX}] [SENSe:]FREQuency:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of frequency measurement.
[SENSe:]FREQuency:RANGe:LOWer? [{MIN|MAX}]	Query and set the lower limit of AC bandwidth of frequency measurement. <filter> can be 3, 20 or

[SENSe:]FREQuency:RANGe:LOWer {<filter>|MIN|MAX|DEF}	200. The "DEF" is 20.
[SENSe:]FREQuency:VOLTage:RANGe:AUTO ? [SENSe:]FREQuency:VOLTage:RANGe:AUTO <mode>	Query and set the state of the voltage auto range function of frequency measurement.
[SENSe:]FREQuency:VOLTage:RANGe[:UPPe r]? [{MIN|MAX}] [SENSe:]FREQuency:VOLTage:RANGe[:UPPe r] {<voltage_range>|MIN|MAX|DEF}	Query and set the voltage range of frequency measurement.
[SENSe:]FRESistance:APERture? [{MIN|MAX}] [SENSe:]FRESistance:APERture {<second>|MIN|MAX|DEF}	Query and set the aperture time of 4-wire resistance measurement. **Note:** DM3000 only receives this command but does not response to it.
[SENSe:]FRESistance:NPLC? [{MIN|MAX}] [SENSe:]FRESistance:NPLC {<PLCs>|MIN|MAX|DEF}	Query and set the aperture time of 4-wire resistance measurement. The input value and return value are both multiples of PLC. **Note:** DM3000 only receives this command but does not support the NPLC value setting function.
[SENSe:]FRESistance:NULL[:STATe]? [SENSe:]FRESistance:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of 4-wire resistance measurement.
[SENSe:]FRESistance:NULL:VALue? [{MIN|MAX}] [SENSe:]FRESistance:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of 4-wire resistance measurement.
[SENSe:]FRESistance:RANGe:AUTO? [SENSe:]FRESistance:RANGe:AUTO <mode>	Query and set the state of the auto range function of 4-wire resistance measurement.
[SENSe:]FRESistance:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]FRESistance:RANGe[:UPPer] {<range>|MIN|MAX|DEF}	Query and set the range of 4-wire resistance measurement.
[SENSe:]FRESistance:RESolution? [{MIN|MAX}] [SENSe:]FRESistance::RESolution {<resolution>|MIN|MAX|DEF}	Query and set the reading resolution of 4-wire resistance measurement.
[SENSe:]FUNCtion[:ON]?	Query and set the current measurement function of

[SENSe:]FUNCtion[:ON] "<function>"	the instrument.
[SENSe:]MEASure:CAPacitance? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the capacitance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for capacitance measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:CONTinuity?	Reset all the continuity measurement parameters and trigger parameters to their defaults, and then configure the multimeter for continuity measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:CURRent:AC? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the AC current measurement parameters and trigger parameters to their defaults, and then configure the multimeter for AC current measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:CURRent[:DC]? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the DC current measurement parameters and trigger parameters to their defaults, and then configure the multimeter for DC current measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:DIODe?	Reset all the diode measurement parameters and trigger parameters to their defaults, and then configure the multimeter for diode measurements. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:FREQuency? [{<range>|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the frequency measurement parameters and trigger parameters to their defaults, and then configure the multimeter for frequency measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:FRESistance? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the 4-wire resistance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for 4-wire resistance measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:PERiod?	Reset all the period measurement parameters and

[{<range>|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	trigger parameters to their defaults, and then configure the multimeter for period measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure:RESistance? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the 2-wire resistance measurement parameters and trigger parameters to their defaults, and then configure the multimeter for 2-wire resistance measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure[:VOLTage]:AC? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the AC voltage measurement parameters and trigger parameters to their defaults, and then configure the multimeter for AC voltage measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEASure[:VOLTage][:DC]? [{<range>|AUTO|MIN|MAX|DEF} [,{<resolution>|MIN|MAX|DEF}]]	Reset all the DC voltage measurement parameters and trigger parameters to their defaults, and then configure the multimeter for DC voltage measurement. Acquire the test result and send it to the output buffer of the instrument.
[SENSe:]MEMory:NSTates?	Query the number of memory locations of system configuration available.
[SENSe:]MEMory:STATe:CATalog?	Query the names of all the memory locations of system configuration.
[SENSe:]MEMory:STATe:DELete {1|2|3|4|5|6|7|8|9|10}	Delete the contents in the specified memory location of system configuration.
[SENSe:]MEMory:STATe:DELete:ALL	Delete the contents in all the memory locations of system configuration.
[SENSe:]MEMory:STATe:NAME? {1|2|3|4|5|6|7|8|9|10}	Query the filename in the specified memory location of system configuration.
[SENSe:]MEMory:STATe:RECall:AUTO? [SENSe:]MEMory:STATe:RECall:AUTO <mode>	Query and set the state of the auto recall function of the specific state information at power-on.
[SENSe:]MEMory:STATe:VALid? {1|2|3|4|5|6|7|8|9|10}	Query whether a system configuration available is stored in the specified memory location of system configuration.
[SENSe:]OUTPut:TRIGger:SLOPe? [SENSe:]OUTPut:TRIGger:SLOPe <slope>	Query and set the type (positive pulse or negative pulse) of the output signal of the multimeter.

	<slope> can be POSitive or NEGative.
[SENSe:]PERiod:APERture? [{MIN|MAX}] [SENSe:]PERiod:APERture {<second>|MIN|MAX|DEF}	Query and set the aperture time of period measurement. **Note:** DM3000 only receives the command but does not respond to it.
[SENSe:]PERiod:NULL[:STATe]? [SENSe:]PERiod:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of period measurement.
[SENSe:]PERiod:NULL:VALue? [{MIN|MAX}] [SENSe:]PERiod:VALue {<value>|MIN|MAX}	Query and set the NULL value of period measurement.
[SENSe:]PERiod:VOLTage:RANGe:AUTO? [SENSe:]PERiod:VOLTage:RANGe:AUTO <mode>	Query and set the state of the voltage auto range function of period measurement.
[SENSe:]PERiod:VOLTage:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]PERiod:VOLTage:RANGe[:UPPer] {<voltage_range>|MIN|MAX|DEF}	Query and set the voltage range of period measurement.
[SENSe:]RESistance:APERture? [MIN|MAX] [SENSe:]RESistance:APERture {<second>|MIN|MAX|DEF}	Query and set the aperture time of 2-wire resistance measurement. **Note:** DM3000 only receives the command but does not respond to it.
[SENSe:]RESistance:NPLC? [{MIN|MAX}] [SENSe:]RESistance:NPLC {<PLCs>|MIN|MAX|DEF}	Query and set the integral time of 2-wire resistance measurement. The input value and return value are both multiples of PLC. **Note:** DM3000 only receives the command but does not support the NPLC value setting function.
[SENSe:]RESistance:NULL[:STATe]? [SENSe:]RESistance:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of 2-wire resistance measurement.
[SENSe:]RESistance:NULL:VALue? [{MIN|MAX}] [SENSe:]RESistance:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of 2-wire resistance measurement.
[SENSe:]RESistance:RANGe:AUTO? [SENSe:]RESistance:RANGe:AUTO <mode>	Query and set the state of the auto range function of 2-wire resistance measurement.
[SENSe:]RESistance:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]RESistance:RANGe[:UPPer]	Query and set the range of 2-wire resistance measurement.

{<range>|MIN|MAX|DEF}	
[SENSe:]RESistance:RESolution? [{MIN|MAX}] [SENSe:]RESistance:RESolution {<resolution>|MIN|MAX|DEF}	Query and set the reading resolution of 2-wire resistance measurement.
[SENSe:]VOLTage:AC:BANDwidth? [{MIN|MAX}] [SENSe:]VOLTage:AC:BANDwidth {<filter>|MIN|MAX|DEF}	Query the filter bandwidth of AC voltage measurement and the query returns the boundary bandwidth (3, 20 or 200). Set the filter bandwidth of AC voltage measurement to 3, 20 or 200.
[SENSe:]VOLTage:AC:NULL[:STATe]? [SENSe:]VOLTage:AC:NULL[:STATe] {ON|OFF}	Query and set the state of the NULL function of AC voltage measurement.
[SENSe:]VOLTage:AC:NULL:VALue? [{MIN|MAX}] [SENSe:]VOLTage:AC:NULL:VALue {<value>|MIN|MAX}	Query and set the NULL value of AC voltage measurement.
[SENSe:]VOLTage:AC:PEAK:STATe? [SENSe:]VOLTage:AC:PEAK:STATe {ON|OFF}	Query and set the state of the peak-peak measurement function of AC voltage measurement. **Note:** DM3000 only receives the command but does not support the peak-peak measurement function.
[SENSe:]VOLTage:AC:RANGe:AUTO? [SENSe:]VOLTage:AC:RANGe:AUTO <mode>	Query and set the state of the auto range function of AC voltage measurement.
[SENSe:]VOLTage:AC:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]VOLTage:AC:RANGe[:UPPer] {<range>|MIN|MAX|DEF}	Query and set the range of AC voltage measurement.
[SENSe:]VOLTage[:DC]:APERture? [{MIN|MAX}] [SENSe:]VOLTage[:DC]:APERture {<second>|MIN|MAX|DEF}	Query and set the aperture time of DC voltage measurement. **Note:** DM3000 only receives the command but does not respond to it.
[SENSe:]VOLTage[:DC]:APERture:ENABle? [SENSe:]VOLTage[:DC]:APERture:ENABle {ON}	Query the state of the interval function of DC voltage measurement. Set the interval function of DC voltage measurement to "ON".
[SENSe:]VOLTage[:DC]:IMPedance:AUTO?	DM3000 only receives this command but does not

[SENSe:]VOLTage[:DC]:IMPedance:AUTO {ON |1}	respond to it.
[SENSe:]VOLTage[:DC]:NPLC? [{MIN|MAX}] [SENSe:]VOLTage[:DC]:NPLC {<PLCs>|MIN|MAX|DEF}	Query and set the integral time of DC voltage measurement. The input value and return value are both multiples of PLC. **Note:** DM3000 only receives the command but does not support the NPLC value setting function.
[SENSe:]VOLTage[:DC]:NULL[:STATe]? [SENSe:]VOLTage[:DC]:NULL[:STATe] {ON|OFF}	Query and set the state of the Null function of DC voltage measurement.
[SENSe:]VOLTage[:DC]:NULL:VALue? [{MIN|MAX}] [SENSe:]VOLTage[:DC]:NULL:VALue {<value>|MIN|MAX}	Query and set the Null value of DC voltage measurement.
[SENSe:]VOLTage[:DC]:PEAK:STATe? [SENSe:]VOLTage[:DC]:PEAK:STATe {ON|OFF}	Query and set the state of the peak-peak measurement function of DC voltage measurement. **Note:** DM3000 only receives the command but does not support the peak-peak measurement function.
[SENSe:]VOLTage[:DC]:RANGe:AUTO? [SENSe:]VOLTage[:DC]:RANGe:AUTO <mode>	Query and set the state of the auto range function of DC voltage measurement.
[SENSe:]VOLTage[:DC]:RANGe[:UPPer]? [{MIN|MAX}] [SENSe:]VOLTage[:DC]:RANGe[:UPPer] {<range>|MIN|MAX|DEF}	Query and set the range of DC voltage measurement.
[SENSe:]VOLTage[:DC]:RESolution? [{MIN|MAX}] [SENSe:]VOLTage[:DC]:RESolution {<resolution>|MIN|MAX|DEF}	Query and set the reading resolution of DC voltage measurement.
SAMPle:TIMer? [{MIN|MAX}] SAMPle:TIMer {<interval>|MIN|MAX}	Query and set the sample interval.
SYSTem:BEEPer:STATe? SYSTem:BEEPer:STATe <mode>	Query and set the state of the beeper. The range of <mode> is {ON|OFF|1|0}.
SYSTem:BEEPer[:IMMediate]	This command causes the beeper to buzz once. Note: this command is only effective when the

	beeper is enabled.
SYSTem:COMMunicate:ENABle? <interface>	DM3000 only receives this command but does not respond to it.
SYSTem:COMMunicate:ENABle <mode>,<interface>	DM3000 only receives this command but does not respond to it.
SYSTem:COMMunicate:GPIB[:SELF]:ADDRess? * SYSTem:COMMunicate:GPIB[:SELF]:ADDRess {<address>}*	Query and set the GPIB address.
SYSTem:COMMunicate:LAN:BSTatus? *	Query the LAN interface state of the instrument.
SYSTem:COMMunicate:LAN:CONTrol? *	This command reads the number of the initial terminal of Sockets. **Note:** DM3000 only receives this command but the interface does not support Socket communication.
SYSTem:COMMunicate:LAN:DDNS? * SYSTem:COMMunicate:LAN:DDNS <mode>*	Query and set the state of the dynamic DNS (domain name server).
SYSTem:COMMunicate:LAN:DHCP? * SYSTem:COMMunicate:LAN:DHCP <mode>*	Query and set the state of DHCP.
SYSTem:COMMunicate:LAN:DNS? * SYSTem:COMMunicate:LAN:DNS "<address>"*	Query and set the address of static DNS.
SYSTem:COMMunicate:LAN:GATEway? [{CURRent|STATic}* SYSTem:COMMunicate:LAN:GATEway "<address>"*	Query and set the current default gateway of the instrument.
SYSTem:COMMunicate:LAN:HOSTname? [{CURRent|STATic}]* SYSTem:COMMunicate:LAN:HOSTname "<name>"*	Query and set the current host name of the instrument.
SYSTem:COMMunicate:LAN:IPADdress? [{CURRent|STATic}]* SYSTem:COMMunicate:LAN:IPADdress "<address>"*	Query and set the current IP (Internet Protocol) address of the instrument.
SYSTem:COMMunicate:LAN:MAC? *	Query the MAC (Media Access Control) address, namely the link layer address.
SYSTem:COMMunicate:LAN:SMASk? [{CURRent|STATic}]*	Query and set the current subnet mask of the instrument.

SYSTem:COMMunicate:LAN:SMASk "<mask>"*	
SYSTem:LANGuage? SYSTem:LANGuage {EN|CH}	Query and set the display language (Chinese or English) of the instrument.
SYSTem:VERSion?	Query the version of the SCPI (Standard Commands for Programmable Instruments) standard that is used by the instrument.
SYSTem:ERRor?	Read and clear an error from the instrument's error queue.
TRIGger:COUNt? [{MIN|MAX}] TRIGger:COUNt {<count>|MIN|MAX|INFinity}	Query and set the number of triggers of the instrument.
TRIGger:DELay? [{MIN|MAX}] TRIGger:DELay {<second>|MIN|MAX|DEF}	Query and set the delay between the trigger signal and the measurement.
TRIGger:DELay:AUTO? TRIGger:DELay:AUTO {ON|OFF|1|0}	Query and set the state of the auto trigger delay function.
TRIGger:SLOPe? TRIGger:SLOPe <slope>	Query and set the edge type (rising edge or falling edge) of external trigger of the instrument. <slope> can be POSitive or NEGative.
TRIGger:SOURce? TRIGger:SOURce <source>	Query and set the current trigger source of the instrument. <source> can be AUTO, SINGLE or EXT.

Note: commands marked with * are only applicable to DM3064, DM3062, DM3054 and DM3052.

Fluke Commands Compatibility

The following table lists the Fluke commands supported by **RIGOL** DM3000 series digital multimeter. Before using these commands, please select the Fluke command set using the **CMDSet** command (send the CMDSet FLUKE command). For more details on this command, please refer to the "Command Set Introduction"on page 1-5.

Note: the functions of the Fluke commands in **RIGOL** DM3000 series digital multimeter are listed in the "Function" column in the table below.

Fluke Command	Function
AAC	Enable the AC current measurement function.
ADC	Enable the DC current measurement function.
VDC	Enable the DC voltage measurement function.
VAC	Enable the AC voltage measurement function.
CONT	Enable the continuity measurement function.
DIODE	Enable the diode measurement function.
FREQ	Enable the frequency measurement function.
FREQ2	Enable the frequency measurement function on the secondary display while the instrument is in AC measurement.
OHMS	Enable the resistance measurement function.
WIRE2	Switch to the 2-wire resistance measurement function.
WIRE4	Switch to the 4-wire resistance measurement function.
FUNC1?	Query the current main measurement function.
FUNC2?	Query the current secondary measurement function. It is only available for AC measurement. For other measurement functions, the query returns NULL.
CLR2	Clear the secondary function. This command is available only when the frequency measurement function is enabled during AC measurement.
DB	Enable the DB measurement function.
DBCLR	Exit the DB measurement function.
DBREF <value>	Set the DB reference value. The reference value corresponding to the parameter is as shown in the table below. The unit of reference resistance is dBm.

	<value>	Reference Value	
	1	2	
	2	4	
	3	8	
	4	16	
	5	50	
	6	75	
	7	93	
	8	110	
DBREF?	Query the DB reference value.		
HOLD	Enable the reading hold function of the multimeter.		
HOLDCLR	Exit the reading hold function and restore the multimeter to normal working.		
HOLDTHRESH <threshold>	Set the threshold of HOLD measurement. The corresponding relations between the parameter and threshold are as shown in the table below. 	<threshold>	Threshold
---	---
1	0.01%
2	0.1%
3	1%
4	10%			
HOLDTHRESH?	Query the threshold of HOLD measurement.		
MAX	The multimeter enters the MAX modifier mode with the current measurement value as the maximum.		
MAXSET <numeric value>	The multimeter enters the MAX modifier mode with the numeric value as the maximum.		
MIN	The multimeter enters the MIN modifier mode with the current measurement value as the minimum.		
MINSET <numeric value>	The multimeter enters the MIN modifier mode with the numeric value as the minimum.		
MMCLR	Exit the MIN MAX mode. The stored minimum and maximum values will be lost.		
MOD?	Query the numeric value corresponding to the modifier mode currently used. 1 = MIN, 2 = MAX, 4 = HOLD, 8 = dB, 32 = REL, 64 = COMP. If multiple modifier modes are selected, the value returned is the sum of the numeric values corresponding to the selected modifier		

	modes. If none of the modifier modes is selected, the query returns 0.
REL	The multimeter enters the relative (REL) modifier mode with the value currently displayed on the screen as the relative base value.
RELCLR	Exit the relative (REL) modifier mode and return to the range mode.
RELSET <relative base>	The multimeter enters the relative (REL) modifier mode with the <relative base> as the relative base value.
RELSET?	Query the relative base used by the multimeter.
AUTO	Set the multimeter to the auto range mode.
AUTO?	Query whether the multimeter is in auto range mode.
FIXED	The multimeter exits the auto range mode on the primary display and enters manual ranging. The current range becomes the selected range.
RANGE <value range>	Set the range of the current measurement function.
RANGE1?	Query the range of the current measurement function.
RATE <speed>	Set the measurement rate. <speed> can be S, M or F, which correspond to the three measurement resolutions of the instrument respectively and correspond to 33 readings/second, 5 readings/second and 2.5 readings/second respectively.
RATE?	Query the measurement rate.
MEAS?	Query the current measurement value of the multimeter.
MEAS1?	Query the voltage value shown on the primary display during AC measurement. This command is equivalent to "MEAS?" for other measurement functions.
MEAS2?	Query the frequency value shown on the secondary display during AC measurement. For other measurement functions, error will occur.
VAL?	Query the current measurement value of the multimeter.
VAL1?	Query the voltage measurement value shown on the primary display during AC measurement. This command is equivalent to "VAL?" for other measurement functions.
VAL2?	Query the frequency value shown on the secondary display during AC measurement. For other measurement functions, error will occur.
COMP	The multimeter enters the compare (COMP) mode.
COMP?	Query the compare result of the current measurement. The query returns "HI", "LOW" or "PASS".

COMPCLR	Exit the compare (COMP) mode and restore the multimeter to normal working.
COMPHI <high value>	Set the high value (HI) of the compare (COMP) mode.
COMPLO <low value>	Set the low value (LO) of the compare (COMP) mode.
TRIGGER <type>	Set the trigger type. <type> can be 1, 2, 3, 4, or 5. Limited by its working principle, DM3000 only supports 1; when type is set to the other values, error will occur.
TRIGGER?	Query the trigger type. Limited by the working principle of the instrument, the query can only return 1.
SERIAL?	Query the instrument serial number.

Appendix: Command Quick Reference