



- Up to 320 switch channels per mainframe, save on cost of ownership
- Can be run without PC
- USB logging
- Interval scanning with storage of up to 100,000 time-stamped readings
- 8 kinds of cards supported
- 6½ digits DMM can be enabled/disabled in any of slots
- Standard SCPI commands
- Math statistics: AVG, MAX, MIN, SDEV
- 4.3' TFT LCD
- Powerful PC software
- Full Interfaces supported: USB Device, USB Host, GPIB, LAN(LXI-Core 2011 Device), RS232

M300 Series Data Acquisition/Switch System with modular structure, which combines precision measurement capability with flexible signal connections, can provide versatile solutions for the applications with multiple points or signals to be tested in product performance test during R&D phase as well as automatic test during production process.

M300 Series Data Acquisition/Switch System



Product Dimensions: Width X Height X Depth=239.0mm×159.0 mm×373.4 mm Weight: 5.7 kg(Without Package)

Feature and Benefits

Channel Configuration Guide

RIGOL					∲ Loca
Measure	Scaling	➢ Alarm	📎 Advar	iced	
Chan No.:					
Function:	SENSOR	DCV		2WR	
Range:		Auto	200mV		
	Next		Done	Re	etum

Measurement Configuration

RIGOL					∲ Loc
Measure)	Scaling	> Alarm	🗋 📎 Adva	nced	
Mode:	NONE [H+L0			
Channel:		Alarm1			
HI:	10.00000V				
LO:	5.000000				
Pack	Next		Den	D.	-trans

Alarm Configuration

Channel Monitor



Single Channel Monitor

Multi-View Switch

Scan Lictlict					1 1101 120
Scan St	art Time:2D	13-07-23	14:44:	38.223	
Scan Sweep:16			Count:48		
101	DCV				1
Max	994.104	10mV	201	3-07-23 14:4	44:38.223
Min	994.018	37mV	201	3-07-23 14:	44:38.223
Average	994.068	3miV			
SDEV	26.75190uV				
Read	Save	Chan i	Data	Search	

Display real-time scan information and all the measurement data of the channel selected



Scaling Configuration

RIGOL				1	Lo
Measure 📎	Scaling	» Alarm	» (Advan	ced	
Integ: ┥	0,2PLC	1PLC	2PLC	10PLC	
IMP:	>10GΩ	10MΩ			
AZ:		ON			
Delay:		Auto			
Back	Ned		Done	Ret	um

Advanced Configuration

Chan	Function	Range	Meas Value	Alarm
201	DCV	Auto	-1.217665mV	LO
202	DCV	Auto	-2.832402mV	LO
203	DCV	Auto	-2.499097mV	LO
204	DCV	Auto	-1.635608mV	LO
205	DCV	Auto	-2.397539mV	LO
206	DCV	Auto	-2.771096mV	LO
207	DCV	Auto	-2.657446mV	LO

Multiple/All Channel Monitor

RIG	OL 9		► SC.	N)					¢Ŀ	ocal
101	102	103	104	105	106	107	108	109	110	Π
111	112	113	114	115	116	117	118	119	120	
121	122	123	124	125	126	127	128	129	130	
131	132	133	134	135	136	137	138	139	140	
141	142	143	144	145	146	147	148	149	150	
151	152	153	154	155	156	157	158	159	160	
161	162	163	164	201	202	203	204	205	206	
207	208	209	210	211	212	213	214	215	216	
Sea	rch									

Display real-time channel status



Draw scan data curves

Alarm Data	Time	Channel	Mode	Alarm
994.0293mV	07-23 14:05:05.000	101	н	1

Alarm Information

Multiple Configuration Copy Functions



Multiple configuration copy function, can configure multiple channels conveniently and quickly



Channel Copy

112 2938559Cyc	313 2938539Cyc	314 2938537Cyc
315 2938497Cyc	316 2936496Cyc	317 293878BCyc
318 2938742Cyc	319 2938746Cyc	320 2938727Cyc
321 2938491Cyc	322 2938471Cyc	323 2938684Cyc
324 2938673Cyc	325 2936465Cyc	326 2938470Cyc
327 2938462Cyc	328 2938459Cyc	329 2938457Cyc
330 2938455Cyc	331 2938452Cyc	332 2938453Cyc
397 1422989Cyc	398 0Cyc	399 1418841Cyc

Record each relay cycle on each module

No.	Error Info
	113,"Undefined header; keyword cannot be found
2	-113, "Undefined header; keyword cannot be found"
3	-113, "Undefined header; keyword cannot be found"
4	-102,"Syntax error"

Error Information



Module Copy



Extended Copy

To Control Each Module Separately



To control each module separately

RIGOL					ψLo	ocal
	01 02 103 104 105 105 106 107 108			117 5 118 5 119 5 20 21 5 22 5 22 5 22 5 23 5 24 5 5 5 5 5 5 5 5 5 5 5 5 5 5	25 27 26 27 28 27 28 27 28 27 28 27 29 20 20 20 20 20 20 20 20 20 20 20 20 20	
Open	Close	R	ead	Card Reset	Return	

MC3164 Control Interface

RIGOL			∲ Loca
DIN 01 66666666 0b1111 1111	DIN 02 0000000 001111 1111	DIN 03 00000000 0b1111 1111	DIN 04 66666666 0b1111 1111
05 TOT ♥ IN ● Gate 0	06 TOT ♥ IN © Gate	OT TOT Gate	08 TOT © IN © Gate
09 DAC	10 DAC	11 DAC - 0	12 DAC -• +00.000 V
Read V	Vrite	Chan Re	eset Return

MC3534 Control Interface

RIGOL					∳ Lo	ocal
	01 02 03 04 05 06 07 08	109 10 11 12 13 14 15 16 11 11 12 13 14 15 16 11 11 12 13 14 15 16		17 18 19 20 21 22 23 23 24	25 21 26 21 27 21 28 21 29 21 29 21 30 21 31 21 31 22 1 21 32	
Open	Close	R	ead	Card Reset	Page D	n

MC3132 Control Interface



MC3648 Control Interface

RIGOL						🕴 Local
		-©NC -©COM -©NO	03		04	
05, S		NC ■© COM ■© NO	07		08	
		ORC NO NO	11		12	
13		P®NC ■©COM ■©NO	15		16	
Open	Close			Card Re	set	Return

MC3416 Control Interface

Channel Configuration of Ultra Acquire



Data Analysis of Ultra Acquire



Modules/Terminal Block Supported by M300

Module	Terminal Block	Description
DMM-MC3065	MC3065 doesn't need terminal block	 DMM module Used to measure the signal 61/2 digits Support the following functions: DCV, ACV, DCI, ACI, 2WR, 4WR, FREQ, PERIOD, TEMP and any sensor After connecting the DMM module, make sure that the signal under test connected to the analog bus is no greater than 300 Vdc or 300 Vrms
	RIGOL MISTB20	 20-channel multiplexer All 20 channels switch both HI and LO inputs Support 4-wire measurement The signal to be tested is connected through the M3TB20 terminal block Can be connected with MC3065
RIGOL MUX32-MC3132	RIGOL M3TB32	 32–channel multiplexer All 32 channels switch both HI and LO inputs Support 4–wire measurement The signal to be tested is connected through the M3TB32 terminal block Can be connected with MC3065
RIGOL MUX64–MC3164	RIGOL M3TB64	 64–channel single–ended multiplexer All 64 channels can switch HI input only Doesn't support 4–wire measurement The signal to be tested is connected through the M3TB64 terminal block Can be connected with MC3065
MIX24-MC3324	RIGOL M3TB24	 Mixed multiplexer with 20 voltage channels and 4 current channels All 20 voltage channels switch both HI and LO inputs 20 voltage channels support 4-wire measurement 4 current channels are used to measure DC current or AC current The signal to be tested is connected through the M3TB24 terminal block Can be connected with MC3065

ACT-MC3416	RIGOL M3TB16	 16-channel actuator Can connect signal to the device under test or enable external device Any of the 16 channels can switch to Normally-Open (NO) and Normally-Closed (NC) states The signal is connected through the M3TB16 terminal block
MFC-MC3534	RIGOL M3TB34	 Multifunction module DIO: four 8-bit digital input/output ports TOT: four totalizer input terminals DAC: four analog output terminals The signal is connected through the M3TB34 terminal block
MATRIX-MC3648	RIGOL M3TB48	 4 x 8 two-wire matrix switch Used to connect multiple devices to multiple points on the device under test 32 two-wire cross points which can connect any combination of inputs and outputs at the same time The signal is connected through the M3TB48 terminal block

Multiplexers Selection Guide

M300 provides five kinds of multiplexers and five kinds of external terminal blocks which are used to connect signals. These multiplexers support three types of connection modes: 1-wire mode, 2-wire mode and 4-wire mode. You can select your desired multiplexer and terminal block by referring to the following table.

		MC3120	MC3132	MC3164	MC3324
Number of Channels		20	32 64		20+4
		2–wire mode or 4–wire mode	2–wire mode or 4–wire mode	1-wire mode	2–wire mode or 4–wire mode
Scan Speed		60Ch/s	60Ch/s	60Ch/s	60Ch/s
Terminal Block		M3TB20	M3TB32	M3TB32 M3TB64	
DC Voltage		\sim	\checkmark	\checkmark	\checkmark
AC Voltage		\sim			\checkmark
DC Current					\checkmark
AC Current					\checkmark
2WR		\sim		\checkmark	\checkmark
4WR		\sim	\checkmark		\checkmark
Frequency		\sim	\checkmark	\checkmark	\checkmark
Period		\sim	\checkmark	\checkmark	\checkmark
Temperature	TC	\sim	\checkmark		\checkmark
	RTD	\sim	\checkmark	\checkmark	\sim
	RTD 4W	\sim	\checkmark		\checkmark
	Thermistor	\sim	\checkmark		\checkmark
Any Sensor	DC Voltage	\sim	\checkmark		\checkmark
	DC Current				\checkmark
	2WR	\sim	\sim	\sim	\sim
	4WR	\sim			\sim
	Frequency	\sim	\checkmark	\sim	\sim

MC3120 20-Channel Multiplexer

- 20-channel multiplexer
- All 20 channels switch both HI and LO inputs
- Support 4-wire measurement
- The signal to be tested is connected through the M3TB20 terminal block
- Can be connected with MC3065







MC3132 32-Channel Multiplexer

- 32-channel multiplexer
- All 32 channels switch both HI and LO inputs
- Support 4-wire measurement
- The signal to be tested is connected through the M3TB32 terminal block
- Can be connected with MC3065







MC3164 64-Channel Single-ended Multiplexer

- · 64-channel single-ended multiplexer
- · All 64 channels can switch HI input only
- Doesn't support 4-wire measurement
- The signal to be tested is connected through the M3TB64 terminal block
- Can be connected with MC3065







MC3324 20-voltage-channel+4-current-channel Mixed Multiplexer

- Mixed multiplexer with 20 voltage channels and 4 current channels
- · All 20 voltage channels switch both HI and LO inputs
- 20 voltage channels support 4-wire measurement
- 4 current channels are used to measure DC current or AC current
- The signal to be tested is connected through the M3TB24 terminal block
- Can be connected with MC3065





MC3416 16-channel Actuator

- · 16-channel actuator
- Can connect signal to the device under test or enable external device
 Any of the 16 channels can switch to Normally-Open (NO) and
- Normally-Closed (NC) states
- The signal is connected through the M3TB16 terminal block









MC3534 Multifunction Module

- Multifunction module
- DIO: four 8-bit digital input/output ports
- TOT: four totalizer input terminals
- DAC: four analog output terminals
- The signal is connected through the M3TB34 terminal block









MC3648 4×8 Matrix Switch

- 4×8 two-wire matrix switch
- $\boldsymbol{\cdot}$ Used to connect multiple devices to multiple points on the device under test
- 32 two-wire cross points which can connect any combination of inputs and outputs at the same time
- The signal is connected through the M3TB48 terminal block







RIGOL

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