



RELAY CONTROLLER'S MANUAL



RELAY CONTROLLER

RELAY CONTROLLER by Milestone is a device that helps person/s to control various electric appliances sitting at one place through remote keypad or local keypad or RS 232 interface.

Models Available:	
ML 4 RL	4 Relay Control
ML 8 RL	8 Relay Control

Features:	
Installation	Easy to Install 100% Plug and Play Unit
Compatibility	Can switch 230 V 8 Amp. Devices
Selection	<p><u>Individual Relay controlled through</u></p> <ul style="list-style-type: none"> ➤ Individual Local keypad ➤ Individual remote keypad (optional). ➤ Remote contact closure. ➤ RS232C interface. ➤ RS422/RS485 interface (optional). ➤ IR / RF Remote Keypad (optional).
Indication	LED Indication for working channel
Unit Identity Code	2 Bit DIP Switch (For RS-232 only)
Exclusive Relay Operation	4 Pairs of Relays through DIP Switch Setting (When one of the pair is ON other will be OFF and vice versa).
Multiple Unit Operation	Using Unit Identifier, up to 32 Relays can be operated (ML-8RL X 4) through single RS232C Controller.
Battery Backup	Last selected status stored in battery-backed memory.
Isolation	RS-232C & relays are optically isolated.



Specifications:		
Model	ML 4 RL	ML8 RL
Nos. Of Relay	4	8
Input Power Terminal Block 230 V 60 Amp	1	1
Out Put – 3 Pin Captive Screw 230V, 8A (L, N, E)	2	4
Output – 4 Pin Captive Screw 230V, 8A, (F, L, N, E)	2	4
LED Indication	1-4 & Power	1-8 & Power
Key Pad Selection	1-4	1-8
Remote Keypad / Contact Closure Connector	D9M x 1	D9M x 1
Manual / RS232 Select switch	Yes	Yes
RS-232 Interface	D9F x 1	D9F x 1
DIP Switch Settings	8 Bits	8 Bits
Unit Identifier Code	2 Bits	2 Bits
Exclusive Relay Mode	4 Bits	4 Bits
Mains Input (AC.)	230 V	230 V
Dimension (Table Top)	288x130x52	288x130x68
Dimension (Rack 19")	1U	1U
Weight	1770g	2000g



DIP Switch Selection:

A. Normal / Exclusive Mode Selection:

DIP SWITCH	POSITION	OPERATION
1.	OFF	Relay 1 & 2 <i>Normal Mode Operation</i>
	ON	Relay 1 & 2 <i>Exclusive Mode Operation</i>
2.	OFF	Relay 3 & 4 <i>Normal Mode Operation</i>
	ON	Relay 3 & 4 <i>Exclusive Mode Operation</i>
3.	OFF	Relay 5 & 6 <i>Normal Mode Operation</i>
	ON	Relay 5 & 6 <i>Exclusive Mode Operation</i>
4.	OFF	Relay 7 & 8 <i>Normal Mode Operation</i>
	ON	Relay 7 & 8 <i>Exclusive Mode Operation</i>

Normal Mode Operation: - Relay 1 and Relay 2 works as Independent Relays

Exclusive Mode Operation: - If Relay 1 is ON; Relay 2 will remain OFF and vice versa.
Always works in pair.

Operation in Exclusive Mode for Relay 1 & 2.

- 1) Keep the dip Switch 1 to ON position.
- 2) Use Relay 1 connector '4 Pin Captive Screw' for motor.
(Do not use Relay 2 Connector if motor used.)
- 3) Connect common of motor to N.
Connect Forward wire to F
Connect Reverse wire to L
Connect Earth to E
- 3) Press Key '1' for reverse motor drive and press Key '2' for forward motor drive
 - Similarly for Relay 3 & 4, 5 & 6, 7 & 8.
 - For operation in normal mode. Do not use F of Relay 1, Relay 3, Relay 5, Relay 7.



B. Unit Identity Code Selection (Only for RS-232C Command)

DIP SWITCH 5	DIP SWITCH 6	UNIT IDENTIFIER CODE
OFF	OFF	!
OFF	ON	#
ON	OFF	@
ON	ON	\$

OPERATION:

At Power ON, all the relay status remains as per last selected when powered OFF (using battery backed memory feature)

A. Manual Mode:

Keep the select switch on rear panel to NORMAL Mode.

• **Local Keypad:**

Controls the required output from the front panel keypad. Pressing the individual keypad will toggle the respective relay output (ON or OFF)

Note: Pressing any key for more than 2 seconds will OFF all the relays.

• **Remote Contact Closure / Remote Keypad:**

Rear Panel has a D9 Male Connector to connect Milestone’s remote keypad or any other remote contact closure that can be operated from a distance from 50 meters.

The connector diagram for D9 male connector is as follows:

D-9 Male	Relay Driver
1	1
2	2
:	:
:	:
8	8
9	Common ground

Note: Particular relay can be operated by shorting respective pin-to-pin 9 through contact switch or by using Milestone’s remote keypad.



B. Remote RS232 interface

Keep the select rear panel to **RS 232** Mode. D9 female connector from rear panel is used for selecting the relay drive through RS232C Interface.

The pin configurations are:

D-9 Female	Signals
3	RX
5	GRD

The simple commands used for selecting the relays are:

RELAY	Decimal (Set by DIP switch 5 & 6)	ASCII
1 ON	1! or 1@ or 1# or 1\$	31, 21
2 ON	2! or 2@ or 2# or 2\$	32, 21
:	:	:0
8 ON	8! or 8@ or 8# or 8\$	38, 21
1 OFF	a! or a@ or a# or a\$	61, 21
:	:	:
8 OFF	h! or h@ or h# or h\$	68, 21
All OFF	0! or 0@ or 0# or 0\$	30, 21

Communication parameters are 9600 baud, 8-bit, 1 stop bit and no parity.

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