

MT-i/iQ Series HMI User Manual

Thank you for purchasing Coolmay MT series HMI. This manual provides instructions of product characteristics, general specifications, hardware interface and software settings, etc..Detailed programming, please refer to "Coolmay MT-i/iQ series HMI User Manual". "Coolmay Programming User Manual".

HMI main features:

1. Provides vector galleries and supports self-built gallery
2. Resistive touch panel with high precision and reliability
3. Supports any-format static images and GIF animation
4. Supports all fonts in Windows
5. 60,000 TFT true color display
6. Comes with SD card, can store historical data
7. Support USB flash disk download program and import/export data
8. Equipped with an RS232 and an RS485 communication port, supporting multiple protocols
9. Vertical display
10. Some products can be equipped with network port, WiFi or audio
11. MT6037i/iQ can be wall mounted

Product Information

◆ Naming rules

MT - 6070 - iQ - W - Y
① ② ③ ④ ⑤

1. Coolmay product series MT series HMI
2. HMI dimension 6037:3.5" 6043:4.3" 6050:5" 6070:7" 6100:10" 6150:15"
3. Version and holes i: basic version (Front panel upper and lower black middle gray)
iV: basic version vertical;
iQ: basic version (Front panel unified grey) iQV: basic version vertical
4. Network / WIFI W: Optional Network port; WIFI: Optional WIFI except 6037 (occupying RS485)
5. Audio Y: Audio (optional)

Model	MT6037i/iQ	MT6043i/iQ	MT6050i/iQ	MT6070i/iQ	MT6100i/iQ	MT6150i/iQ
Display pane	3.5"TFT LCD	4.3"TFT LCD	5.0"TFT LCD	7.0"TFT LCD	10.1"TFT LCD	15.0"TFT LCD
Resolution	320*240	480*272	800*480	800*480/1024*600	1024*600	1024*768
Dimension	88*88*25	134*102*32	151*96*36	210*146*36	275*194*36	386*300*40
Cut-out size	72*72mm	120*94mm	143*86mm	192*138mm	262*180mm	366*280mm
Display	73*56mm	97*56mm	108*65mm	154*87mm	222*125mm	305*229mm
Power consumption	100mA/24V	150mA/24V	150mA/24V	200mA/24V	280mA/24V	500mA/24V
Weight	0.3kg	0.33kg	0.33kg	0.54kg	0.7kg	3.3kg
Brightness	300cd/m ²					450cd/m ²
Power	12-24VDC ±10% <150mA@24VDC					15-24VDC ±10% <500mA@24VDC
RAM	64MB					
CPU	32bit CPU 408MHz					
ROM	NOR Flash 16MB (System area) + SD NAND 128MB (D disk)					
COM port	RS232, RS485, Network port, WiFi(Occupies RS485 . 6037 doesn't support WiFi)					
Color	65536 true color					
Backlight	LED					
Backlight life	60000 hours					
Shell material	engineering plastic ABS+PC					
Electric stress test	500VAC 1 minute					
IP level	IP65 (front panel)					
Environmental temperature	0~50°C					
Environmental humidity	20~90%RH					
Storage	-20~70°C					
Cooling	Natural cooling					
Contrast	400:1					
Allow power down	Within 20ms					

(Continued)

Item	Instructions
USB port	Yes
Calendar	Yes
Input voltage	DC24±10%VDC or customized as DC12V/DC5V input
System diagnosis	Power effect test
Certificate	CE
FCC	Conform to FCC Class A
Anti-interference test	1500Vp-p, pulse period 1μs, continue 1s
Quakeproof test	10-25Hz (X,Y,Z direction) 2G 30mins
Insulation resistance	More than 10MΩ@500VDC
Touch panel	4-wire resistance panel

Mechanical Design

◆ Mounting size

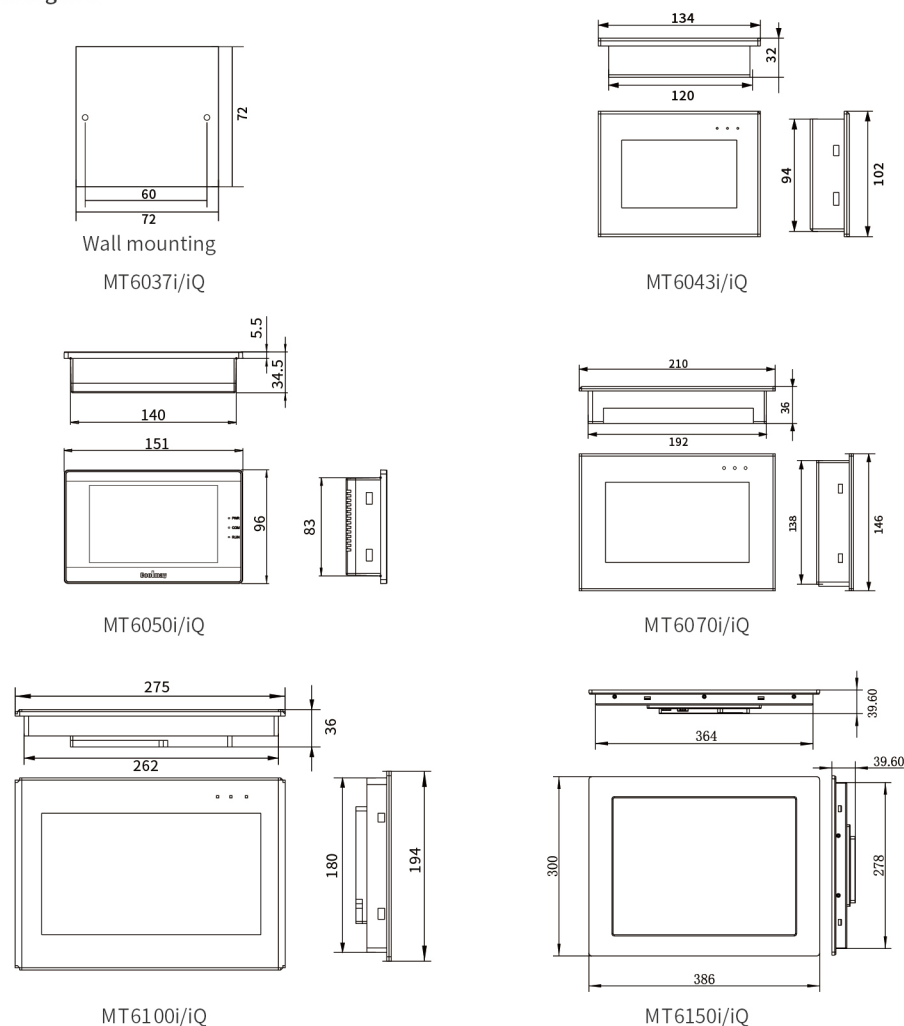


Diagram 1 Mounting size

Model	Mounting size		Dimension W*H*D(mm)
	A(mm)	B(mm)	
MT6037i/iQ	72	72	88*88*25
MT6043i/iQ	120	94	134*102*32
MT6050i/iQ	143	86	151*96*36
MT6070i/iQ	192	138	210*146*36
MT6100i/iQ	262	180	275*194*36
MT6150i/iQ	366	280	386*300*40

※ More specifications can be customized.

Electrical Design

◆ Product structure

(Note: the front panel of i series products is black at the top and bottom, and gray at the middle; iQ series is uniformly gray; There is no obvious difference between others. The following figure is mainly illustrated by iQ series pictures)

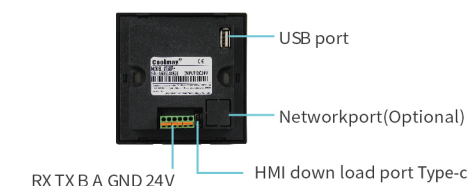


- ① PWR: Power indicator ② LCD ③ Power terminal block ④ Network port(optional) ⑤ RS232/RS485 COM: Flash when PLC communicates with HMI ⑥ USB port ⑦ HMI programming port ⑧ 4 side mounting jack

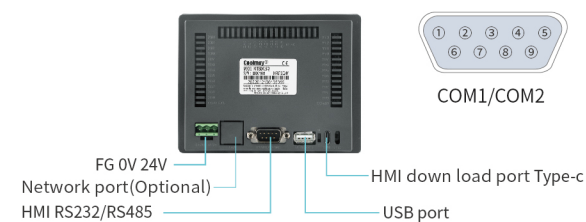
Diagram 2 Product Structure

◆ Hardware Interface

MT6037i/iQ



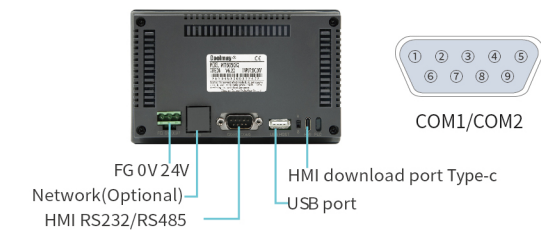
MT6043i/iQ



Pin No	Description
Definition of RS232 COM	
RXD	Receive
TXD	Send
GND	Ground/DC24V-
Definition of RS485 COM	
A	485+
B	485-
DC24V power supply	
24V	DC24V+
GND	Ground/DC24V-

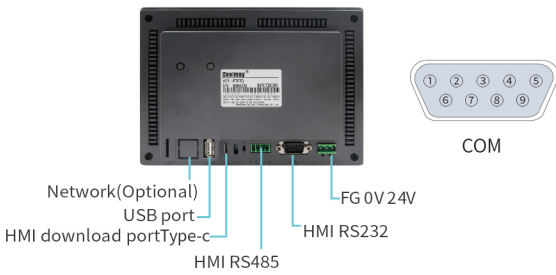
Pin No	Signal	Description
Definition of RS232 COM		
1	RXD	Receive
3	TXD	Send
5	GND	Ground
Definition of RS485 COM		
1	A	485+
6	B	485-

MT6050i/iQ



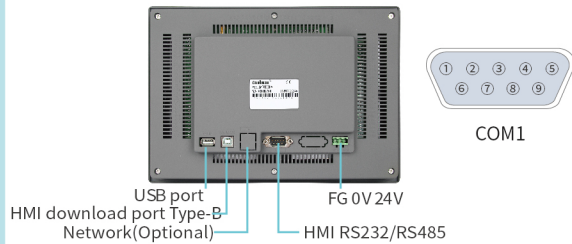
Pin No	Signal	Description
Definition of COM1 RS232 port		
1	RXD	Receive
3	TXD	Send
5	GND	Ground
Definition of RS485 COM port		
1	A	485+
6	B	485-

MT6070i/iQ



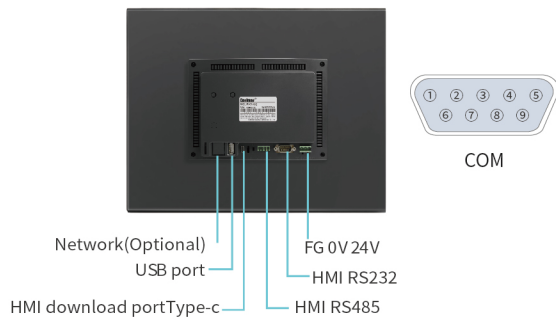
Pin No	Signal	Description
Definition of COM1 RS232 port		
2	RXD	Receive
3	TXD	Send
5	GND	Ground
Definition of RS485 COM port		
terminal (Default)	A1	485+
	B1	485-
Optional and RS232 Cannot be used at the same time	A	485+
	B	485-

MT6100i/iQ



Pin No	Signal	Description
Definition of COM1 RS232 port		
2	RXD	Receive
3	TXD	Send
5	GND	Ground
Definition of RS485 COM port		
1	A	485+
6	B	485-

MT6150i/iQ



Pin No	Signal	Description
Definition of COM1 RS232 port		
2	RXD	Receive
3	TXD	Send
5	GND	Ground
Definition of RS485 COM port		
terminal (Default)	A1	485+
	B1	485-
Optional and RS232 Cannot be used at the	A	485+
	B	485-

Software Parameter settings

In the setting of software setting working parameter Link 1, MT-i/iQ series communication port defaults to COM1: RS232; COM2:RS485; If Link 2 is checked, it can communicate with two serial port devices at the same time.

HMI parameter selections:

Model (horizontal)	HMI parameters	Model ((vertical)	HMI parameters
MT6037i/iQ	MT6037H[320*240]	MT6043iV/iQV	MT6043iQV[272*480]
MT6043i/iQ	MT6043H[480*272]	MT6050iV/iQV/MT6070iV/iQV	MT6070iQV[480*800]
MT6050i/iQ/MT6070i/iQ	MT6070H[800*480]		
MT6100i/iQ	MT6100HA[1024*600]		
MT6150i/iQ	MT6150HA[1024*768]		

Instructions of HMI connecting with all-brand PLCs

Section I COOLMAY CX Series

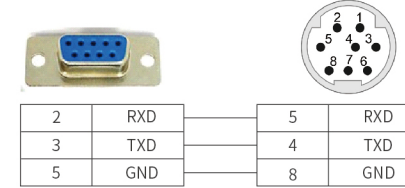
RS232 connection:

1) MT software settings

Parameter	Recommended settings
COM protocol	CoolMay PLC(3U/3G)/FX3U
COM type	RS232
Data bits	7
Stop bits	1
Checking bits	Even
Baud rate	9600

2) MT and COOLMAY CX series PLC RS232 communication cable connection diagram use "CX2N download cable"

MT HMI connects 9 holes type-D female
Coolmay PLC side connected 8-pin male bsae



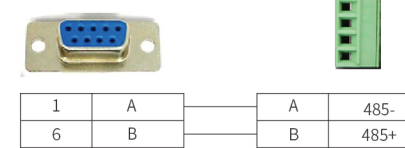
RS485 connection:

1) MT software settings

Parameter	Recommended settings
COM protocol	CoolMay PLC(3U/3G)/FX3U
COM type	RS485
Data bits	7
Stop bits	1
Checking bits	Even
COM rate	9600

2) MT and coolmay CX series PLC RS485 communication cable connection

MT HMI connects 9 holes type-D female
PLC connected to 5PIN terminal



Notes: MT6037i/iQ communication line configuration:

- If communicates with Coolmay FX3GC/FX2NC/DX2N/Mitsubishi PLC, use the same cables as the ones of DX2N(FX2NC) PLC.
- If communicates with Coolmay CX3G/CX2N/DCX2N PLC, use the same cables as the ones of CX2N PLC.

Section II Panasonic FP Series

1) MT software settings

Parameter	Recommended settings
COM protocol	Matsushita FP Series
COM type	RS232
Data bits	8
Stop bits	1
Checking bits	Odd
COM rate	9600

2) MT and Panasonic PLC connections

MT HMI connects 9 holes type-D female
Panasonic PLC connection terminal



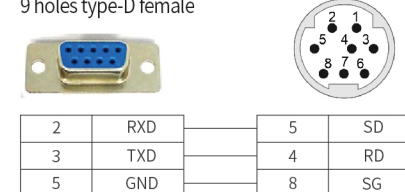
Section III Xinjie PLC Series

1) MT software settings

Parameter	Recommended settings
COM protocol	Xinjie PLC Series
COM type	RS232
Data bits	8
Stop bits	1
Checking bits	Even
COM rate	19200

2) MT and Xinjie PLC communication connection diagram

MT HMI connects 9 holes type-D female
Xinjie PLC side connected 8-pin male



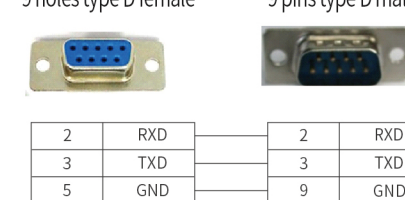
Section IV Omron C Series

1) MT software settings

Parameter	Recommended settings
PLC type	Omron C/CPM/CP/CS/CJ Series
COM type	RS232
Data bits	7
Stop bits	2
Checking bits	Even
Baud rate	9600
Controller ID	0

2) MT(COM1)-Omron PLC connections

MT HMI connects 9 holes type D female
Omron PLC connects 9 pins type D male



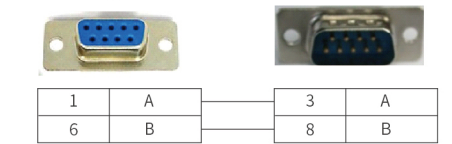
Section V Siemens S7-200 Series

1) MT software settings (change COM1 to RS485)

Parameter	Recommended settings
PLC type	Siemens S7-200 Series
COM type	RS485
Data bits	8
Stop bits	1
Checking bits	Even
Baud rate	9600
Controller ID	2

2) MT(COM1)S7-200 PLC connections

MT HM connects 9 holes type D female
S7-200 PLC connects 9 holes round-type male



Section VI Mitsubishi FX Series

1) MT software settings

Parameter	Recommended settings
PLC type	Mitsubishi FX Series
COM type	RS232
Data bits	7
Stop bits	1
Checking bits	Even
Baud rate	9600
Controller ID	0

2) MT(COM1) FX series PLC connections

Use Mitsubishi programming line
MT HM connects 9 holes type D female
FX series PLC connects 8-pin male



Programming software Coolmay HMI touch screen programming software
Refer to "Coolmay MT-i/iQ Series HMI User Manual" for details

Tips

MT-i/iQ Series HMI User Manual

— Please read carefully the related manuals before using our products, and use this product under the environmental conditions specified in this manual.

- Power on after confirmed the voltage (24VDC, >18W) and right wiring to avoid damage.
- Tighten the screws or the rail while mounting the product to avoid falling off.
- Avoid wiring or plug the cable with electricity, or it is easy to cause electric shock or circuit damage. When the product emits odor or abnormal sound, please immediately switch off the power. While processing screw holes or wiring, do not drop the metal chips and wire head into the ventilation hole of the controller, which may cause product failure and disoperation.
- Ground terminals FG on HMI must right ground connection to improve anti-interference ability.
- Please do not disassemble the product or modify the wiring. Or it may cause malfunction, malfunction, loss, or fire.
- While installing or disassembling the product, ensure to turn off all power. Or it may cause malfunction and breakdown.

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