

MODBUS RTU

Supported Series : MODBUS RTU CONTROLLER

Website : <http://www.modbus.org>

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	MODBUS RTU		
PLC I/F	RS485	RS232/RS485/USB	
Baud rate	9600	9600~115200	
Data bits	8	7, 8	
Parity	Even	Even, Odd, None	
Stop bits	1	1, 2	
PLC sta. no.	1	0-255	

Online simulator	YES	Broadcast command	YES
Extend address mode	YES		

Interval of block pack (words) : 5

Max. read-command size (words) : 120

Max. write-command size (words) : 120

Address Range Limit...

Conversion...

[Address Range Limit]

The address range of 0x, 1x, and 0x_multi_coils device types can be set.

[Conversion]

The 3x_Double and 4x_Double address types are added. If [ABCD ->CDAB] check box is selected, please select 3x_Double and 4x_Double address types.

PLC Setting:

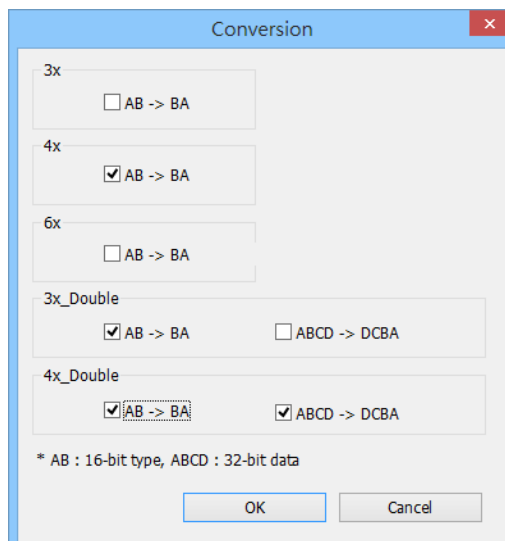
Communication mode	Modbus RTU protocol
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Device Address:

Bit/Word	Device type	Format	Range	Memo
B	0x	DDDDD	1 ~ 65535	Output bit
B	0x_single_bit	DDDDD	1 ~ 65535	*Note4
B	1x_single_bit	DDDDD	1 ~ 65535	*Note4
B	1x	DDDDD	1 ~ 65535	Input bit (read only)
B	3x_Bit	DDDDDdd	100 ~ 6553515	Input Register bit (read
B	4x_Bit	DDDDDdd	100 ~ 6553515	Output Register bit
B	6x_Bit	DDDDDdd	100 ~ 6553515	Output Register bit
B	0x_multi_coils	DDDDD	1 ~ 65535	Write multiple coils
W	3x	DDDDD	1 ~ 65535	Input Register (read only)
W	3x_MAX1W	DDDDD	1 ~ 65535	Display 32 bits *Note1
DW	3x_MAX2W	DDDDD	1 ~ 65535	*Note1
W	4x	DDDDD	1 ~ 65535	Output Register
W	4x_MAX1W	DDDDD	1 ~ 65535	Display 32 bits *Note1
DW	4x_MAX2W	DDDDD	1 ~ 65535	*Note1
DW	5x	DDDDD	1 ~ 65535	4x double word swap
W	6x	DDDDD	1 ~ 65535	4x single word write
W	3x_Double	DDDDD	1 ~ 65535	*Note2
W	4x_Double	DDDDD	1 ~ 65535	*Note2
W	4x_32Bit	DDDDD	1 ~ 65535	Output Registerv *Note1
W	0x_single_coil	DDDDD	1 ~ 65535	*Note3

Note1: MAX1W and 4X_32Bit reads/writes 1 word for each packet and displays a 32-bit value, whereas MAX2W reads/writes 2 words for each packet.

Note2: Go the [System Parameter Settings] -> [Device Properties] and click [Conversion] to set the data format of device types 3x, 4x, 6x, 3x_double, 4x double.



Conversion

3x
 AB -> BA

4x
 AB -> BA

6x
 AB -> BA

3x_Double
 AB -> BA ABCD -> DCBA

4x_Double
 AB -> BA ABCD -> DCBA

* AB : 16-bit type, ABCD : 32-bit data

OK Cancel

Note3: Read/write a Bit at a time. Value 0 and 1 are used to represent ON or OFF status where 0 means set OFF and 1 means set ON.

Note4: The number of bits to read can be set in Macro; therefore, it is recommended to use 0x address type for functions such as GetData() and SetData(), in order to increase reading speed.

To read/write multiple 0x address type in macro, use 0x_multi_coils to increase write speed.

Note5: Please assign all the addresses to Even addresses, or all to Odd addresses, in order to prevent communication failure.

Note6: EBPro V6.03.02 or later supports 64 bits data type (**cMT Series only**), but please note that the address limit range is 48 bits in maximum..

NOTE:

Address type “5x” is mapped to Holding Register. The communication protocol of 5x is almost the same as “4x” except that “5x” swaps double word.

If 4x contains the following information:

Address	1	2	3	4	5	6	...
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x0201		0x0403		0x0605		

For 5x, it will be:

Address	1	2	3	4	5	6	...
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x0102		0x0304		0x0506		

Modbus RTU function code:

Device type	Read	Write
0x	0x01 Read coil	0x05 write single coil
0x_multi_coils	0x01 Read coil	0x0f write multiple coils
1x	0x02 Read discrete input	X
3x / 3x_Bit	0x04 Read input register	X
4x / 4x_Bit	0x03 Read holding register	0x10 write multiple registers
5x	0x03 Read holding register	0x10 write multiple registers
6x	0x03 Read holding register	0x06 write single register
0x_single_coil	0x01 Read coil	0x05 write single coil

Wiring Diagram:

RS232 (Diagram 1 ~ Diagram 3)

Diagram 1

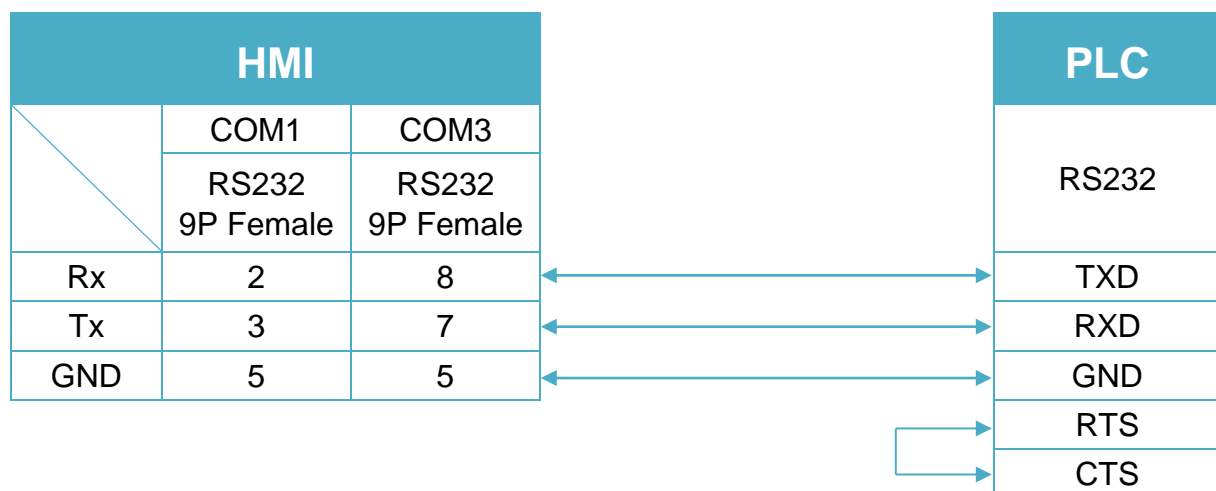
cMT Series *cMT3071 / cMT3072 / cMT3090 / cMT3103 / cMT3151*
eMT Series *eMT3070 / eMT3105 / eMT3120 / eMT3150*
MT-iE *MT8073iE / MT8102iE*
MT-XE *MT8092XE*
MT-iP *MT6103iP / MT8102iP*


Diagram 2

cMT Series	<i>cMT-SVR / cMT-G01 / cMT-G02 / cMT-HDM / cMT-FHD</i>
mTV	<i>mTV</i>
MT-iE	<i>MT8070iE / MT6070iE / MT8100iE / MT8121iE / MT8150iE / MT8071iE / MT6071iE / MT8072iE / MT6072iE / MT8073iE / MT8101iE / MT8102iE / MT8103iE</i>
MT-XE	<i>MT8121XE / MT8150XE / MT8090XE</i>

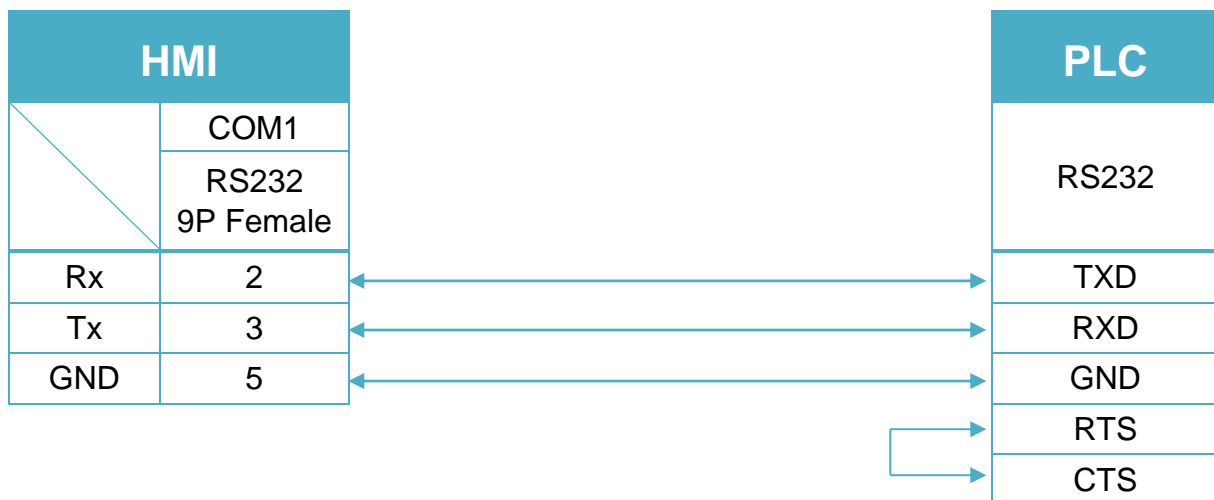
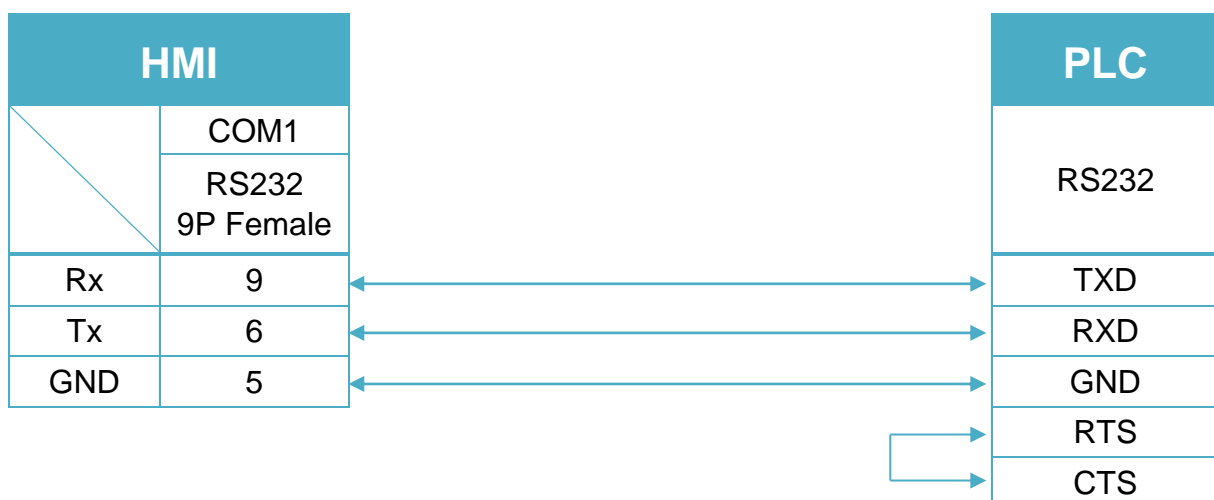


Diagram 3

MT-iE	<i>MT8050iE / MT8053iE</i>
MT-iP	<i>MT6051iP / MT8051iP / MT6071iP / MT8071iP</i>



RS485 4W (Diagram 4 ~ Diagram 7)

Diagram 4

cMT Series	<i>cMT3151</i>
eMT Series	<i>eMT3070 / eMT3105 / eMT3120 / eMT3150</i>
MT-iE	<i>MT8070iE / MT6070iE / MT8100iE / MT8121iE / MT8150iE</i>
MT-XE	<i>MT8121XE / MT8150XE</i>

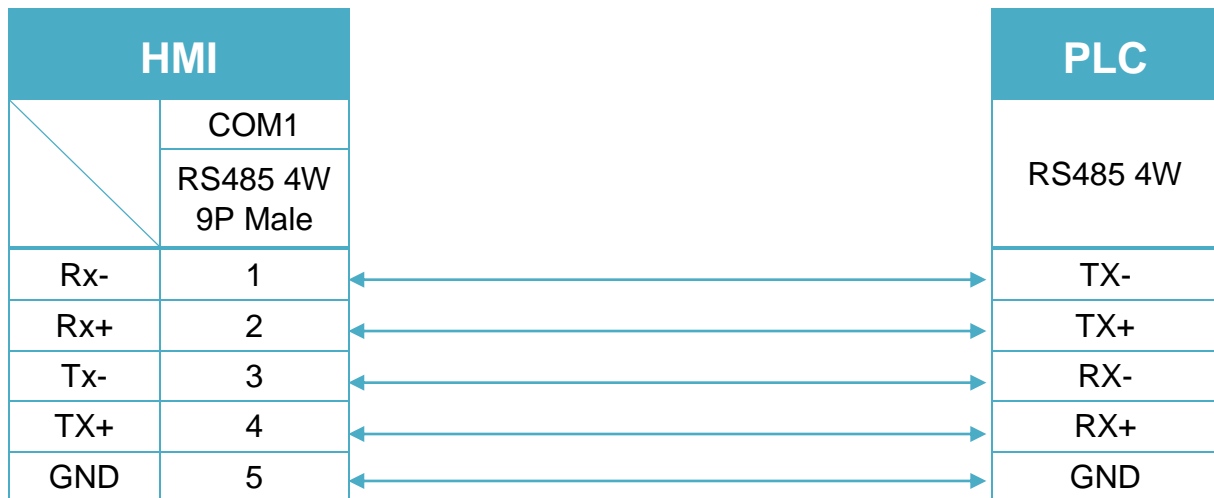


Diagram 5

cMT Series	<i>cMT-SVR / cMT-G01 / cMT-G02 / cMT-HDM / cMT-FHD</i>
mTV	<i>mTV</i>

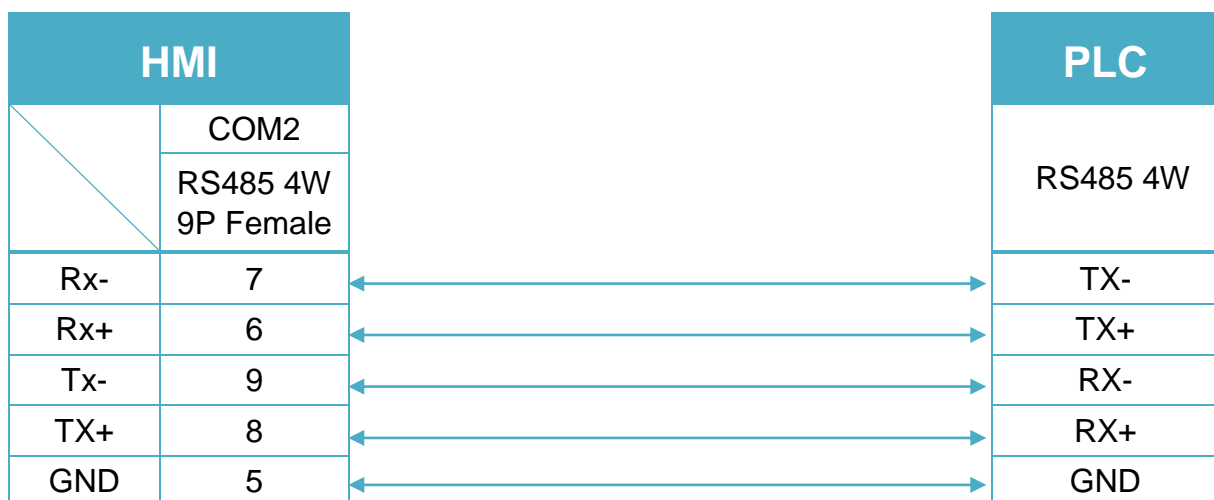


Diagram 6

cMT Series	<i>cMT3071 / cMT3072 / cMT3090 / cMT3103</i>
MT-iE	<i>MT8071iE / MT6071iE / MT8072iE / MT6072iE / MT8073iE / MT8101iE / MT8102iE / MT8103iE</i>
MT-XE	<i>MT8090XE / MT8092XE</i>
MT-iP	<i>MT6071iP / MT8071iP / MT6103iP / MT8102iP</i>

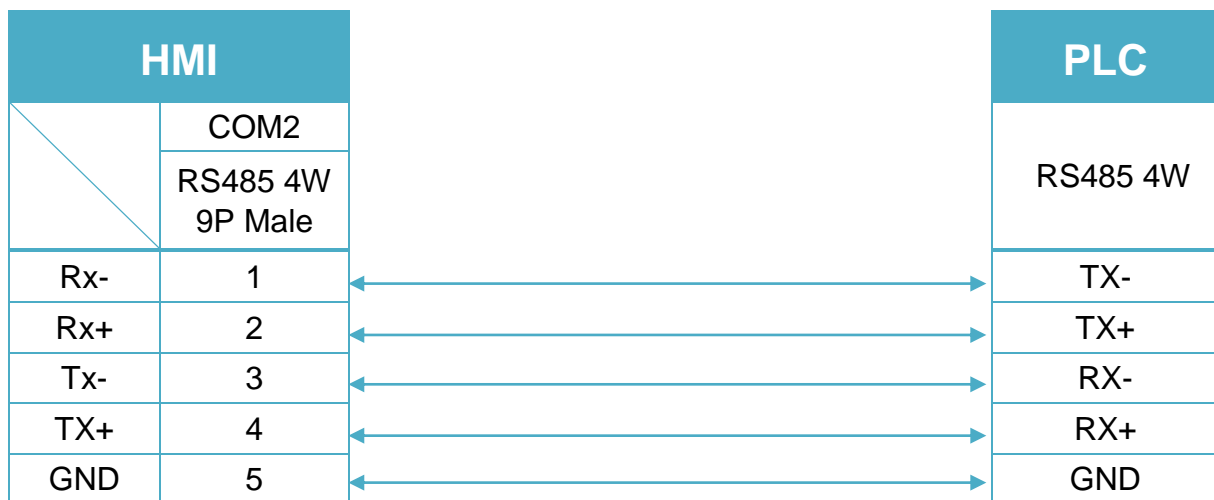
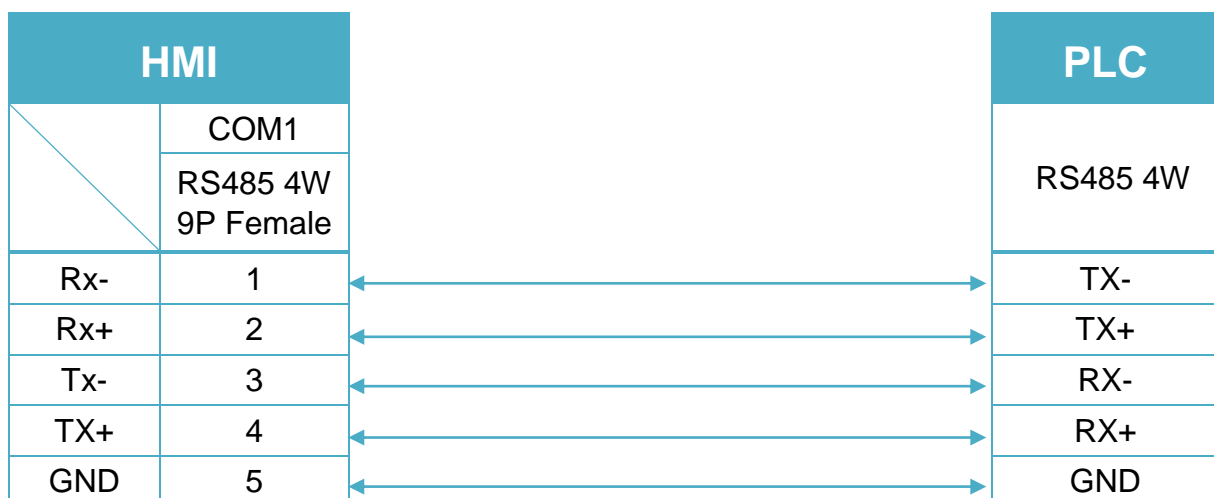


Diagram 7

MT-iE	<i>MT8050iE / MT8053iE</i>
MT-iP	<i>MT6051iP / MT8051iP</i>



RS485 2W (Diagram 8 ~ Diagram 13)

Diagram 8

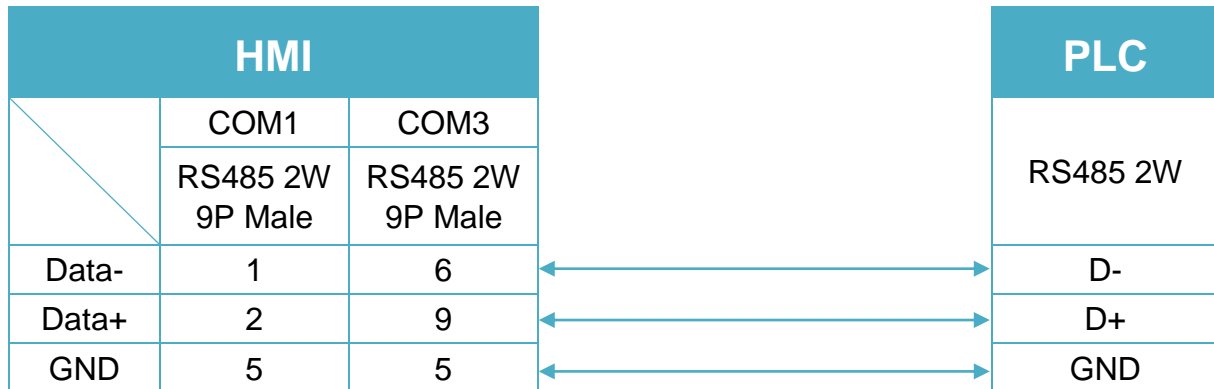
cMT Series *cMT3151*
eMT Series *eMT3070 / eMT3105 / eMT3120 / eMT3150*


Diagram 9

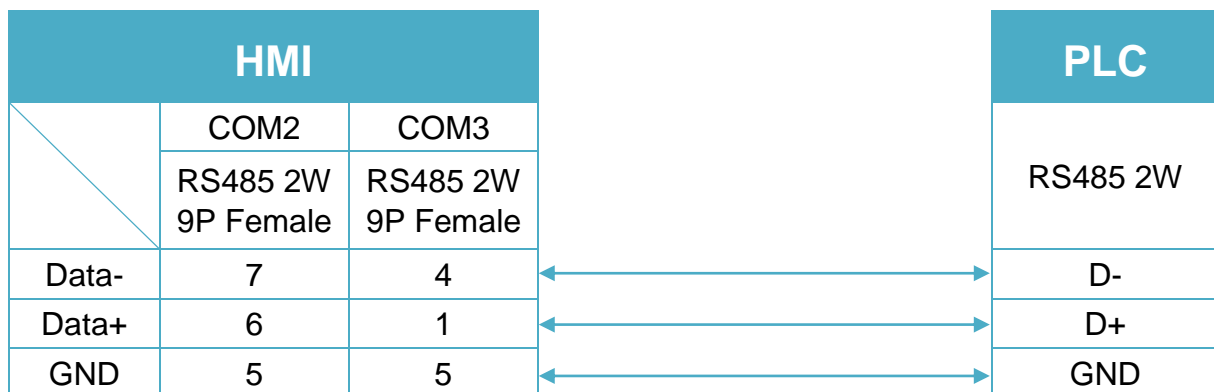
cMT Series *cMT-SVR / cMT-G01 / cMT-G02 / cMT-HDM / cMT-FHD*
mTV *mTV*


Diagram 10

MT-iE *MT8070iE / MT6070iE / MT8100iE / MT8121iE / MT8150iE*

MT-XE *MT8121XE / MT8150XE*

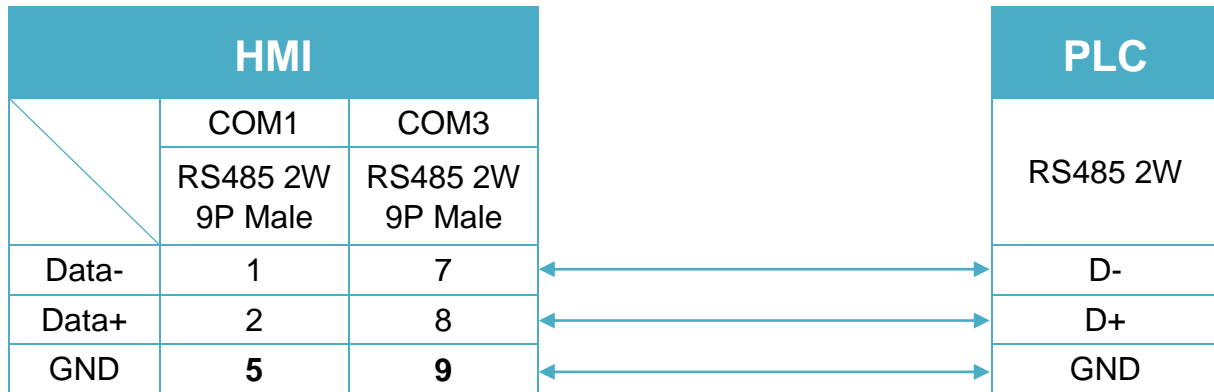


Diagram 11

cMT Series *cMT3071 / cMT3072 / cMT3090 / cMT3103*

MT-iE *MT8071iE / MT6071iE / MT8072iE / MT6072iE / MT8073iE /
MT8101iE / MT8102iE / MT8103iE*

MT-XE *MT8090XE / MT8092XE*

MT-iP *MT6103iP / MT8102iP*

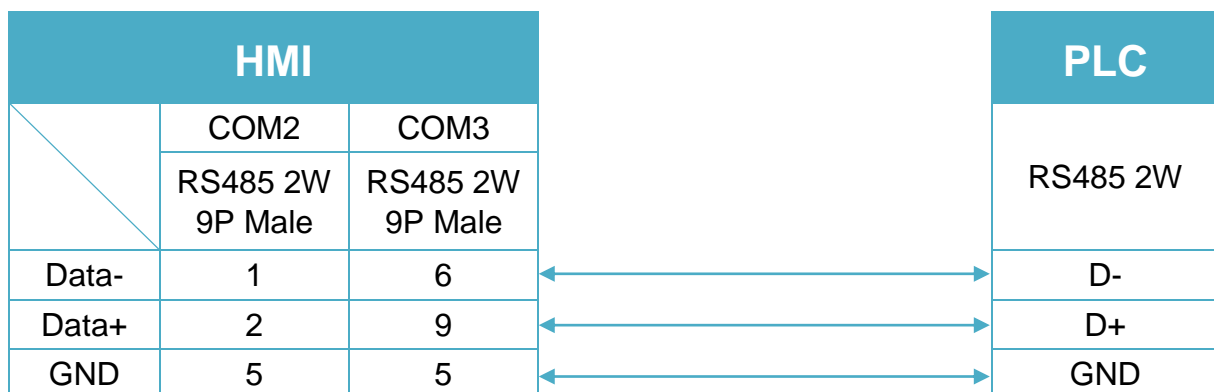


Diagram 12

MT-iE *MT8050iE / MT8053iE*

MT-iP *MT6051iP / MT8051iP*

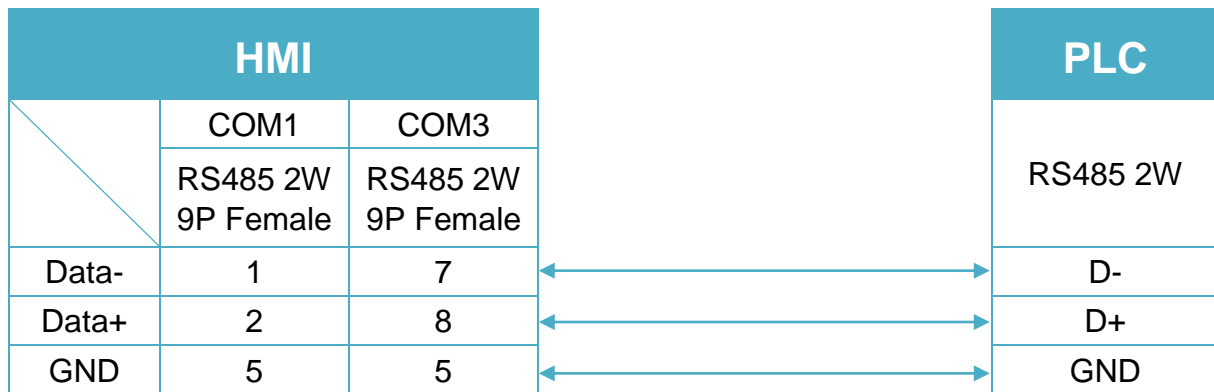


Diagram 13

MT-iP *MT6071iP / MT8071iP*

