

# UNIVERSAL CONVERTER KA301

## USB to RS-232 / 422 / 485 / TTL Multi Function Serial Signal Converter Ver 1.2

KA301 can transfer the RS232/422/485 or TTL serial interface signal to USB signal in order to reach the high speed communication between serial equipments and computers. Besides, KA301 can use by PC USB interface to connect several of Factory Automation Equipments like PLC, HMI, Inverter, and various meters to reach the function of monitor and control, which provides free and various software for communicating test easily.

A USB converter is specially designed for industrial communication control and provides 4 serial communication functions, which is the best choice for automatic program design and engineering application.

### Features

1. Compact outline, streamline design, elegant style, convenient hand carry
2. Provided 3 kinds of converting connectors. Suitable for kinds of the communication interface shift.
3. It directly uses DC power that supplied by PC USB port without external powers avoid the inconvenient of connecting external power supply.
4. Speedy, simple, Plug-in and Using at once, without setting I/O site & IRQ.
5. Provided 3 kinds LED light of Link、TX、RX and can display the act situation.
6. Adopt separated and plug-in-out design to connect RS422/485.
7. Provided the protection of hardware device short circuit and circuit overload.
8. Provided round terminal cable to connect PLC (Mitsubishi FX Series) directly, reducing the complication of wiring.



### Accessories :

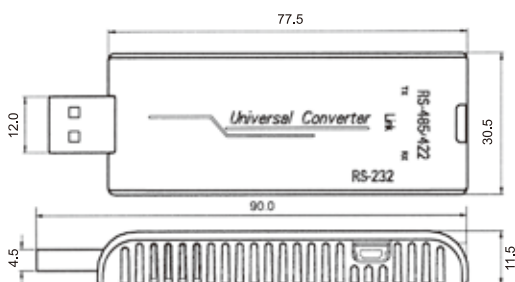
Driver CD	Connectors			CABLE		
<b>USB driver CD</b>	<b>KA502</b>	<b>KA503</b>	<b>KA504</b>	<b>CH-114</b>	<b>CH-116</b>	<b>CH-117</b>
KA301 for installation	For RS-422/485/TTL	Extending use	For RS-232	Extending use for USB	Extending use for RS-232/422/485/TTL	(Round terminal) cable for PLC/RS-422/485/TTL

### Specifications

<b>Power</b>	Supply DC 5V via USB port	<b>Baud rate</b>	300~120K bps
<b>USB Interface</b>	USB 2.0	<b>Data bit</b>	7、8 bit
<b>Serial Interface</b>	RS-232/422/485/TTL	<b>Stop bit</b>	1、2 bit
<b>Flow Rate Control</b>	None、Xon/Xoff	<b>Appositive bit</b>	None、Even、Odd、Mark、Space
<b>The utmost transmitting distance</b>	RS-422/485 : 1200 m RS-232 : 15 m	<b>Operating temperature</b>	0~55°C(32~131°F)
		<b>Humidity</b>	5~95% RH
		<b>Reserved temperature</b>	-20~85°C(-4~185°F)
<b>Transmitting Mode</b>	RS-232/422/TTL: Full Duplex RS-485 : Half Duplex	<b>Net weight</b>	KA301 : 19.8 g KA502 : 12.2 g KA503 : 4.2 g KA504 : 11.0 g
<b>Serial Protection</b>	Fuse、15KV ESD		<b>Approvals</b>
<b>Serial Signal</b>	RS-232 : TXD、RXD、SG RS-422 : T+、T-、R+、R- RS-485 : DX+、DX- TTL : 5V、5G、DX+、DX-	<b>Drive program support</b>	Windows 98/ME/2000/XP/Vista/7/server 2003/server 2008 /CE.NET Mac OS 8/9/OS-X,and Linux

※ First connect KA301 with PC, please install the KA301 driver.


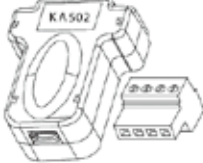
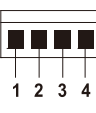
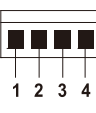
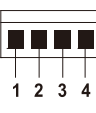

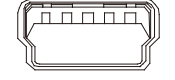

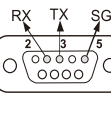
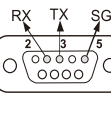
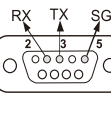
### Dimensions

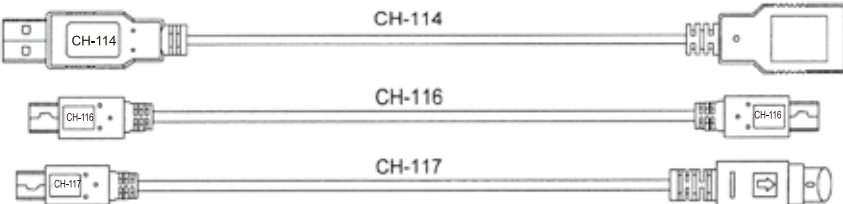
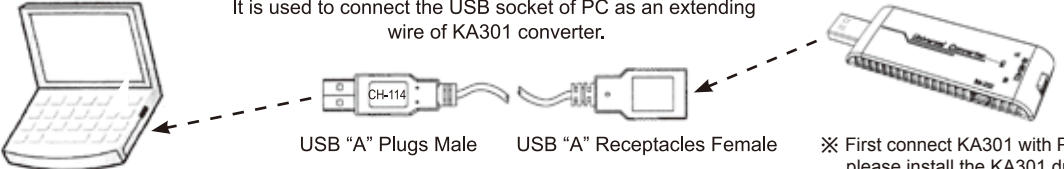
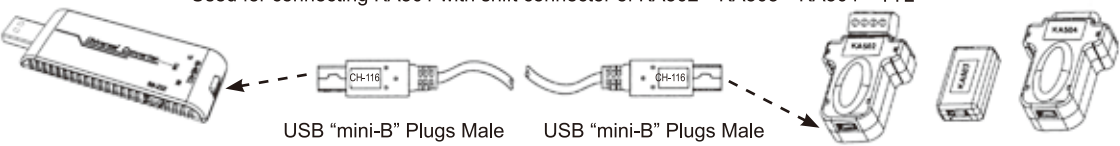
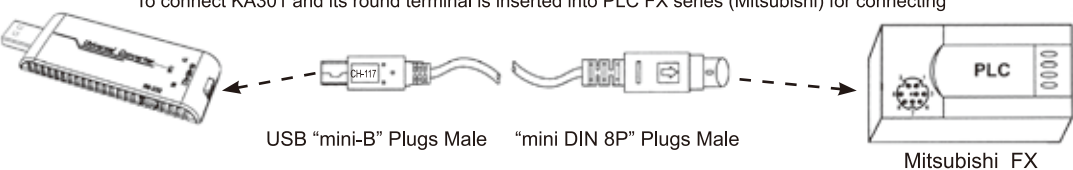


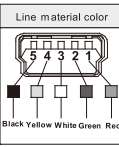


### Packing list of USB Converter :

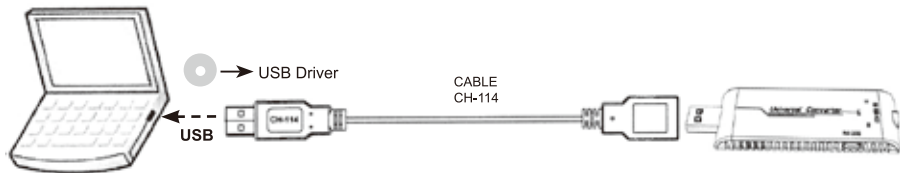
- KA301 Converter × 1
- KA502 Connector × 1
- KA503 Connector × 1
- KA504 Connector × 1
- User Manual × 1
- CH-114 CABLE × 1
- CH-116 CABLE × 1
- CH-117 CABLE × 1
- USB Driver CD × 1

# Accessories explanation & Configurations

<p><b>Connectors</b></p>																													
<p><b>KA502</b></p>		<p><b>Front</b> : Separated plug-in-out terminal 4 pin          RS-422 serial signal, four wires (T-、T+、R+、R-)          RS-485 serial signal, two wires (DX+、DX-)          TTL serial signal, four wires (5V、D+、5G、D-)  <b>Behind</b> : USB "mini-B" Receptacles "female"</p>	<table border="1"> <thead> <tr> <th>Plugs-in</th> <th>PIN</th> <th>RS-485</th> <th>RS-422</th> <th>TTL</th> </tr> </thead> <tbody> <tr> <td rowspan="4">  </td> <td>1</td> <td>NC</td> <td>T(-)</td> <td>5V</td> </tr> <tr> <td>2</td> <td>NC</td> <td>T(+)</td> <td>D+</td> </tr> <tr> <td>3</td> <td>DX+</td> <td>R(+)</td> <td>5G</td> </tr> <tr> <td>4</td> <td>DX-</td> <td>R(-)</td> <td>D-</td> </tr> </tbody> </table>	Plugs-in	PIN	RS-485	RS-422	TTL		1	NC	T(-)	5V	2	NC	T(+)	D+	3	DX+	R(+)	5G	4	DX-	R(-)	D-				
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<p><b>KA503</b></p>		<p><b>Front</b> : USB "mini-B" Receptacles "female",          as an extending connector.  <b>Behind</b> : USB "mini-B" Receptacles "female",          as an extending connector</p>	<p>USB mini-B Receptacles</p> 																										
<p><b>KA504</b></p>		<p><b>Front</b> : RS-232 Plugs "male" serial signal          (TXD、RXD、SG)  <b>Behind</b> : USB "mini-B" Receptacles "female"</p>	<table border="1"> <thead> <tr> <th>DB9 Plugs</th> <th>PIN</th> <th>RS-232</th> <th>PIN</th> <th>RS-232</th> </tr> </thead> <tbody> <tr> <td rowspan="5">  </td> <td>1</td> <td>NC</td> <td>6</td> <td>NC</td> </tr> <tr> <td>2</td> <td>RXD</td> <td>7</td> <td>NC</td> </tr> <tr> <td>3</td> <td>TXD</td> <td>8</td> <td>NC</td> </tr> <tr> <td>4</td> <td>NC</td> <td>9</td> <td>NC</td> </tr> <tr> <td>5</td> <td>SG</td> <td></td> <td></td> </tr> </tbody> </table>	DB9 Plugs	PIN	RS-232	PIN	RS-232		1	NC	6	NC	2	RXD	7	NC	3	TXD	8	NC	4	NC	9	NC	5	SG		
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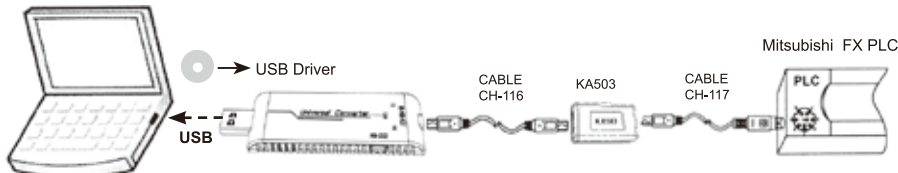
<p><b>CABLE</b></p>																																	
<p><b>CH-114</b></p>	<p>It is used to connect the USB socket of PC as an extending wire of KA301 converter.</p>  <p>USB "A" Plugs Male    USB "A" Receptacles Female    ※ First connect KA301 with PC, please install the KA301 driver.</p>																																
<p><b>CH-116</b></p>	<p>Used for connecting KA301 with shift connector of KA502、KA503、KA504、TTL</p>  <p>USB "mini-B" Plugs Male    USB "mini-B" Plugs Male</p>																																
<p><b>CH-117</b></p>	<p>To connect KA301 and its round terminal is inserted into PLC FX series (Mitsubishi) for connecting</p>  <p>USB "mini-B" Plugs Male    "mini DIN 8P" Plugs Male    Mitsubishi FX</p> <p>Other use :</p> <ol style="list-style-type: none"> <li>Cut off the round plug of "mini DIN 8P" from CH-117 wire. </li> <li>Shelling the wrap of wire off to appropriate length (approx. 5 cm) </li> <li>It can be changed to become to RS422/485 Device or TTL (single micro-chip hardware \ develops) connected line to use.</li> </ol> <table border="1"> <thead> <tr> <th>Line material color</th> <th>Color</th> <th>RS-485</th> <th>RS-422</th> <th>TTL</th> </tr> </thead> <tbody> <tr> <td>1 Red</td> <td>NC</td> <td></td> <td>T(+)</td> <td>5V</td> </tr> <tr> <td>2 Green</td> <td>NC</td> <td></td> <td>T(-)</td> <td>TXD</td> </tr> <tr> <td>3 White</td> <td>DX-</td> <td></td> <td>R(+)</td> <td>RXD</td> </tr> <tr> <td>4 Yellow</td> <td>NC</td> <td></td> <td>NC</td> <td>RTS</td> </tr> <tr> <td>5 Black</td> <td>DX+</td> <td></td> <td>R(-)</td> <td>5G</td> </tr> </tbody> </table> 			Line material color	Color	RS-485	RS-422	TTL	1 Red	NC		T(+)	5V	2 Green	NC		T(-)	TXD	3 White	DX-		R(+)	RXD	4 Yellow	NC		NC	RTS	5 Black	DX+		R(-)	5G
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4 Yellow	NC		NC	RTS																													
5 Black	DX+		R(-)	5G																													

**(1) Instance of wiring instance : CH-114**



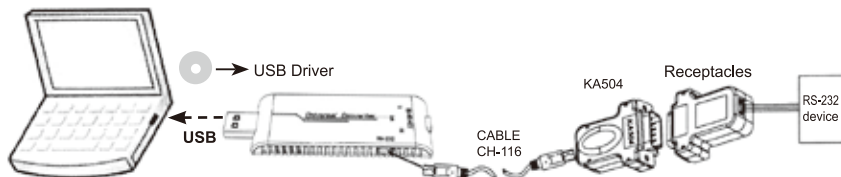
※ First connect KA301 with PC, please install the KA301 driver.

**(2) Instance of wiring instance : KA503**



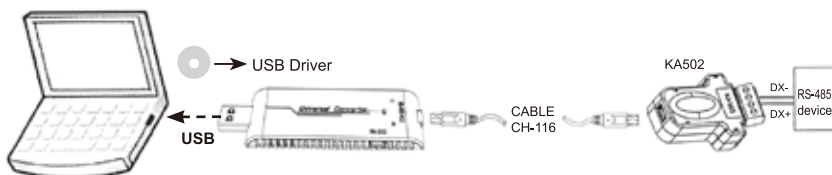
※ First connect KA301 with PC, please install the KA301 driver.

**(3) Connecting RS-232 device :**



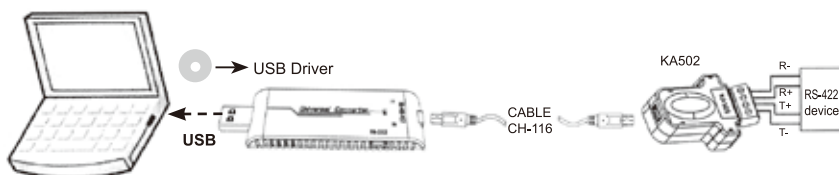
Taking KA301 USB terminal to insert the USB socket of PC and connecting CABLE (CH-116) with KA504 connector, and then connecting the opposite site of KA504 with the RS-232 device of controller.

**(4) Connecting RS-485 device :**



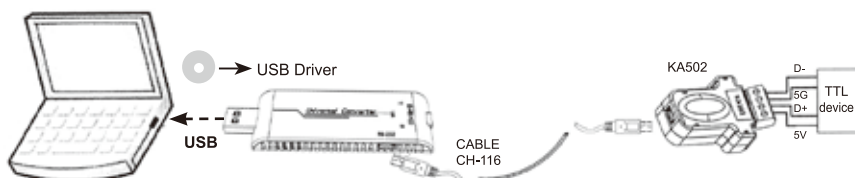
Taking KA301 USB terminal to insert the USB socket of PC and connecting CABLE (CH-116) with KA502 connector, and then connecting the opposite site of KA502 with the RS-485 device of controller.

**(5) Connecting RS-422 device :**



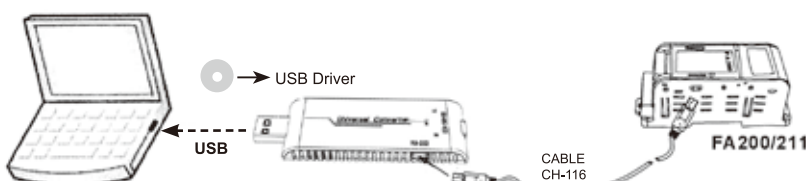
Taking KA301 USB terminal to insert the USB socket of PC and connecting CABLE (CH-116) with KA502 connector, and then connecting the opposite site of KA502 with the RS-422 device of controller.

**(6) Connecting TTL device :**



Taking KA301 USB terminal to insert the USB socket of PC and connecting CABLE (CH-116) with KA502 connector, and then connecting the opposite site of KA502 with the TTL device of controller.

**(7) Connecting FA200/211 Temperature Controller (for parameter copy system) :**



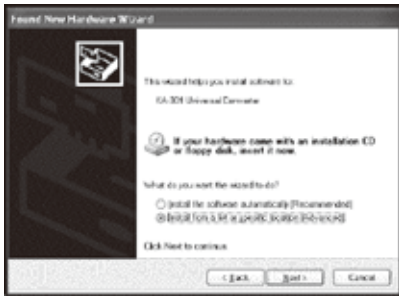
Taking KA301 USB terminal to insert the USB socket of PC, and then connecting CABLE (CH-116) with FA200-211 Temperature controller.

## 1.1 KA301 Universal Converter Installation

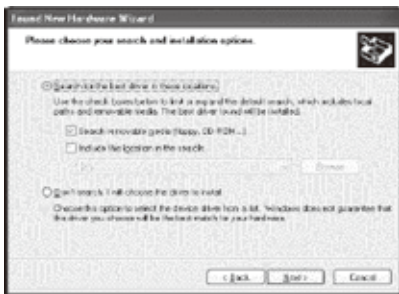
Please insert KA301 into the USB socket of PC at first, then will show "Found New Hardware" .



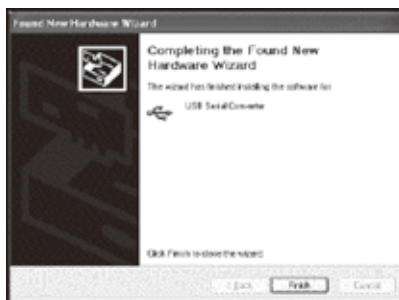
Installing CD into the drive and in "Found New Hardware Wizard" , click "  Install from a list or specific location (Advanced)" items , after that press



Click "  Search for the best driver in these locations" items, and click  Search removable media (floppy, CD-ROM···) ", after that press

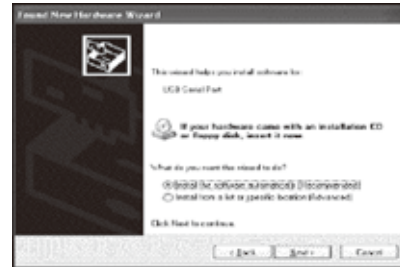


In "Found New Hardware Wizard" , press  ; than will complete the installation.

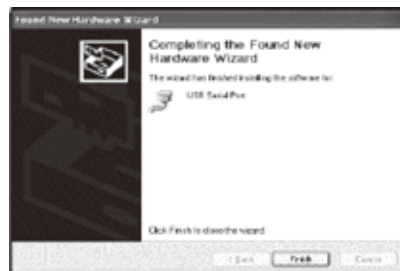


## 1.2 USB Serial Port Installation step

It will automatically jump an elf window of "Found New Hardware Wizard" after finished the USB serial Converter installation, click "  Install the software automatically (Recommended)" after that press



Completing the Found New Hardware Wizard, press

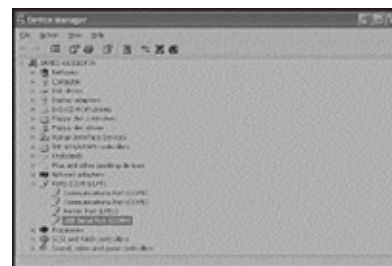


## 1.3 Search USB Serial Port

Click " " → " Run ", key in "devmgmt.msc" at the Run windows, after that press



Click the correct "Ports (COM & LPT)" at the Device Manager windows, it will find the USB Serial Port at once. For example: In this computer the USB Serial Port is COM4.



※ This mean when you insert the KA301 Converter, the USB Serial Port will distribute in COM4.

**Distributor:**