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# UNIVERSAL CONVERTER

Universal Converter **KA301**

USB to RS-232/422/485/TTL



# UNIVERSAL CONVERTER KA301

## USB to RS-232 / 422 / 485 / TTL Multi Function Serial Signal Converter Ver 1.1



Chase miniature & compact · Promote the function practicability · Reduce the cost

### Illustration

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.



Small · Handy · Save the space

### Accessories :

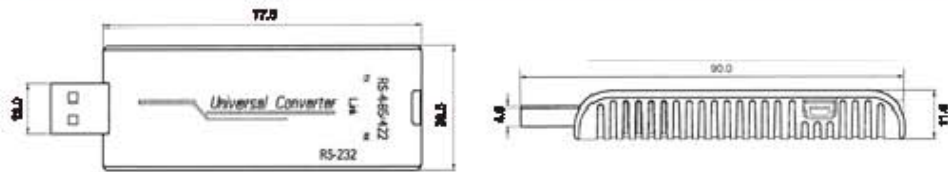
Driver CD	Connectors			CABLE		
<b>USB driver CD</b>	<b>KA502</b>	<b>KA503</b>	<b>KA504</b>	<b>CH-114</b>	<b>CH-116</b>	<b>CH-117</b>
KA301 for installation	For RS-422/485	Extending use	For RS-232	Extending use for USB	Extending use for RS-232/422/485/TTL	(Round terminal) cable for PLC/RS-422/485/TTL

### 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 : TXD · RXD · GND 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>	CE · RoHS
<b>Serial Signal</b>	RS-232 : TXD · RXD · GND RS-422 : T+ · T- · R+ · R- RS-485 : DX+ · DX- TTL : 5V · 5G · DX+ · DX-			<b>Drive program support</b>

※ Before connect KA301 with PC, please install the USB driver at first.

## Dimensions



## Accessories explanation & Configurations

Connectors																																	
KA502		<p>Front : 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 (EV、D+、SG、D-) Behind : USB "mini-B" Receptacles "Female"</p>	<table border="1"> <thead> <tr> <th>Plug-in</th> <th>Pin</th> <th>RS-485</th> <th>RS-422</th> <th>TTL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MC</td> <td>TC-</td> <td>RV</td> <td></td> </tr> <tr> <td>2</td> <td>MC</td> <td>TC+</td> <td>D+</td> <td></td> </tr> <tr> <td>3</td> <td>DX+</td> <td>R(+)</td> <td>SM</td> <td></td> </tr> <tr> <td>4</td> <td>DX-</td> <td>R(-)</td> <td>D-</td> <td></td> </tr> </tbody> </table>	Plug-in	Pin	RS-485	RS-422	TTL	1	MC	TC-	RV		2	MC	TC+	D+		3	DX+	R(+)	SM		4	DX-	R(-)	D-						
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3	DX+	R(+)	SM																														
4	DX-	R(-)	D-																														
KA503		<p>Front : USB "mini-B" Receptacles "Female", as an extending connector. Behind : USB "mini-B" Receptacles "Female", as an extending connector</p>																															
KA504		<p>Front : RS-232 Plugs "male" serial signal (TXD、RXD、SG) Behind : USB "mini-B" Receptacles "Female"</p>	<table border="1"> <thead> <tr> <th>USB Plug</th> <th>Pin</th> <th>RS-232</th> <th>Pin</th> <th>RS-232</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MC</td> <td>D</td> <td>MC</td> <td></td> </tr> <tr> <td>2</td> <td>RXD</td> <td>7</td> <td>NO</td> <td></td> </tr> <tr> <td>3</td> <td>TXD</td> <td>5</td> <td>NO</td> <td></td> </tr> <tr> <td>4</td> <td>SG</td> <td>2</td> <td>NO</td> <td></td> </tr> <tr> <td>5</td> <td>NO</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	USB Plug	Pin	RS-232	Pin	RS-232	1	MC	D	MC		2	RXD	7	NO		3	TXD	5	NO		4	SG	2	NO		5	NO			
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CABLE																																	
CH-114		<p>It is used to connect the USB socket of PC as an extending wire of KA301 converter.</p>																															
CH-116		<p>Used for connecting KA301 with shift connector of KA502、KA503、KA504、TTL</p>																															
CH-117		<p>To connect KA301 and its round terminal is inserted into PLC FX series (Mitsubishi) for connecting</p>																															
<p>Other use :</p> <ol style="list-style-type: none"> <li>1. Cut off the round plug of "mini DIN 6P" from CH-117 wire.</li> <li>2. Shelling the wrap of wire off to appropriate length (approx. 5 cm)</li> <li>3. It can be changed to RS422/485 Device or TTL (single micro-chip hardware develop) connected line to use.</li> </ol> <table border="1" data-bbox="1101 1971 1388 2094"> <thead> <tr> <th>Line terminal 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>MC</td> <td>TC-</td> <td>RV</td> <td>EV</td> </tr> <tr> <td>2 Green</td> <td>MC</td> <td>TC+</td> <td>D+</td> <td>SM</td> </tr> <tr> <td>3 Yellow</td> <td>DX+</td> <td>R(+)</td> <td>D-</td> <td>SM</td> </tr> <tr> <td>4 Yellow</td> <td>DX-</td> <td>R(-)</td> <td>D-</td> <td>SM</td> </tr> <tr> <td>5 Black</td> <td>SG</td> <td>2</td> <td>NO</td> <td>EV</td> </tr> </tbody> </table>				Line terminal color	Color	RS-485	RS-422	TTL	1 Red	MC	TC-	RV	EV	2 Green	MC	TC+	D+	SM	3 Yellow	DX+	R(+)	D-	SM	4 Yellow	DX-	R(-)	D-	SM	5 Black	SG	2	NO	EV
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**(1) Instance of wiring Instance : CH-114**



※Before connect KA301 with PC, please install the USB driver at first.

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



※Before connect KA301 with PC, please install the USB driver at first.

**(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.