USB 3.0 Multiplexer 4:1

USB-205

User's Manual

Ver. 1.0

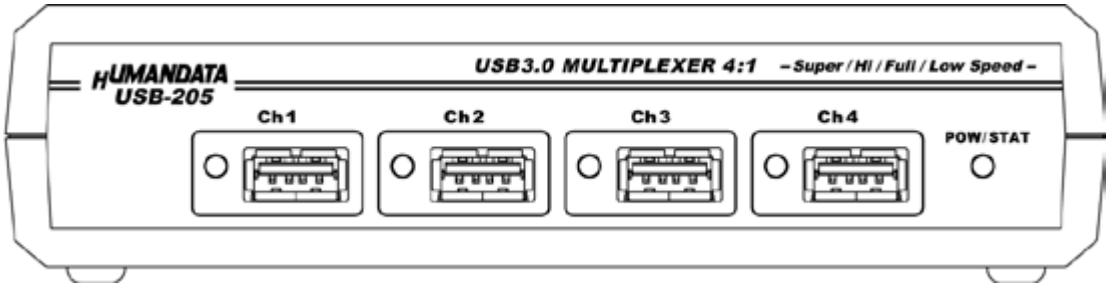

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Table of Contents

- Revision History 1
- Introduction 1

1. Overview 2
   1.1. Setting Switch 2
   1.2. Power Supply 2
2. Specifications 3
   2.1. Optional Accessories 4
3. Controller Command 5
4. Additional Documentation and User Support 6
5. Warranty and Compensation 6

Precautions

Do Not	1	This product uses ordinary off-the-shelf electronic components, and is therefore inappropriate for use in applications that require special quality or reliability and are expected to protect human lives or prevent accidents, such as safety mechanisms in fields including space, aeronautics, medicine, and nuclear power.
	2	Do not be used underwater or in high-humidity environments.
	3	Do not be used in the presence of corrosive gases, combustible gases, or other flammable gases.
	4	Do not turn on power when circuit board surface is in contact with other metal.
	5	Do not apply voltage higher than rated voltage.

Attention	6	This manual may be revised in the future without notice owing to improvements.
	7	All efforts have been made to produce the best manual possible, but if users notice an error or other problem, we ask that they notify us.
	8	Item 7 notwithstanding, HuMANDATA cannot be held liable for the consequences arising from use of this product.
	9	HuMANDATA cannot be held liable for consequences arising from using this product in a way different from the uses described herein, or from uses not shown herein.
	10	This manual, circuit diagrams, sample circuits, and other content may not be copied, reproduced, or distributed without permission.
	11	If the product emits smoke, catches fire, or becomes unusually hot, cut the power immediately.
	12	Do not install the control cables or communication cables together with the main circuit lines or power cables. In such an environment, it may result in malfunction due to noise.
	13	Be careful of static electricity.

Revision History

Date	Revision	Description
Sep. 13, 2016	v1.0	Initial release

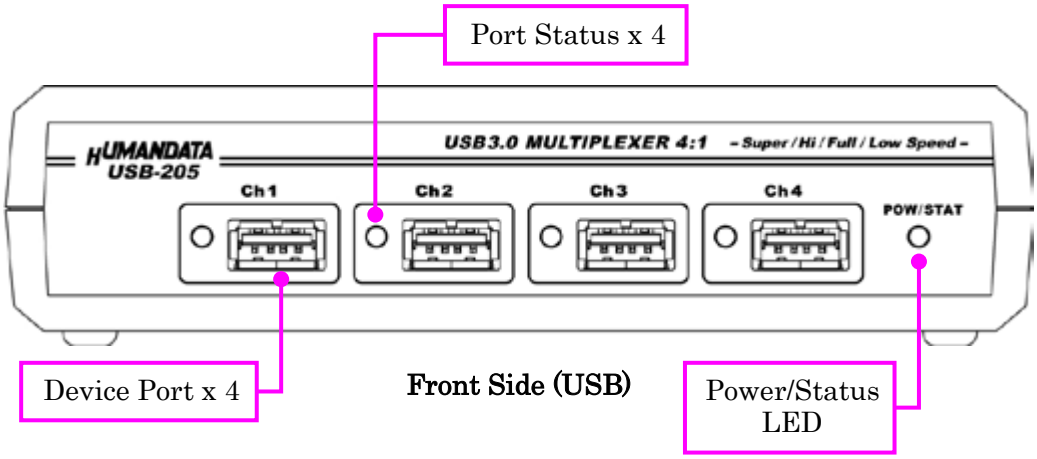
Introduction

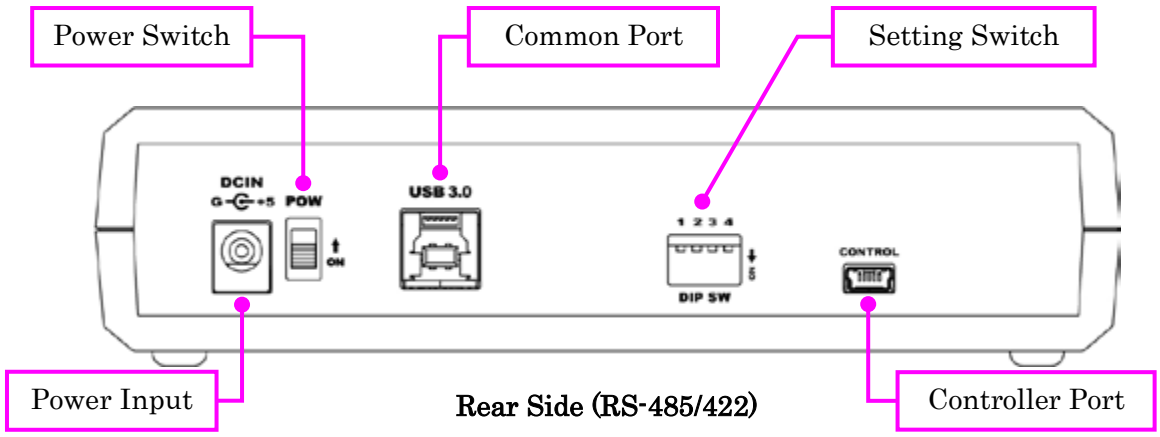
Thank you very much for purchasing our product.
USB-205 is a USB 3.0 SuperSpeed (5Gbps) compliant 4 port USB multiplexer.
Connect USB-205 with USB port for control, and transmit a simple command from your PC, then you can switch 4 USB ports arbitrarily. This can promote labor-saving for testing process and auto-testing system of USB devices.
A current sensor circuit is built in each USB port, so you can monitor current consumption of active port.

* Switching USB 3.0 port is the same as removing and re-mounting USB device. When you switch USB 3.0 port, it is necessary to confirm removing and recognizing the device by your application.

* Please use the attached USB cable when you connect USB-205 to your PC.

1. Overview





1.1. Setting Switch

Function of the setting switch is closed. When you use USB-205, please set all of them to be OFF position.

1.2. Power Supply

USB-205 is self powered and cannot be operated by bus-power. Please input power by attached AC adapter.

2. Specifications

Item	Description	Remarks
Model	USB-205	
Power	5VDC (Self Power)	Supplied by AC adapter
Current Consumption	Less than 300 mA	when no port is selected
Number of Channels	4 ch	
Support OS for device side	not limited	
Support OS for controller side	Windows 10/8.1/8/7/Vista/XP	
Controller Port	USB 2.0 mini-B Connector USB 2.0 Full Speed	ESD protection
Common Port	USB 3.0 B Connector USB 3.0 Super/Hi/Full/Low Speed	ESD protection
Device Port	USB 3.0 A Connector x 4 ch USB 3.0 Super/Hi/Full/Low Speed	ESD protection
Current Sensor Circuit	Simple Current Monitor	
Control Method	Virtual COM port	Setting baud rate and other conditions is not necessary.
Status LED	Power / Status LED x 1 Port Status LED x 4	Bi-color LED
Operating Ambient Temp.	-10 to 60℃	No condensation permitted (excludes AC adapter)
Operating Ambient Humi.	30 to 85%RH	
Storage Ambient Temp.	-10 to 60 °C	
Storage Ambient Humi.	30 to 85%RH	
Weight	Approx. 250 [g]	Only main body
Dimensions	165 x 80.5 x 39 [mm] (6.496" x 3.169" x 1.535")	Without projections

*** There is a case that these parts to be changed to the parts of the compatibility.**

*** Power saving function (suspend, standby, sleep and others) is not supported.**

2.1. Optional Accessories

Model Name	Image	Description
ACC-027		Metal bracket type A for vertical mounting USB series JAN : 4937920801096
ACC-028		Metal bracket type A for horizontal mounting USB series JAN : 4937920801102
ACC-031		Din rail attachment type B for USB series JAN : 4937920801256

3. Control Commands

You can control with simple single character command shown in the following table by using terminal software and keyboard. Each controller command is an ASCII text. The command is case sensitive.

Send Command	Function	Response
'1'～'4'	Select USB port from 1 to 4	<CMD>,[active channel]<CR>
'5'～'8'	Select USB port from 1 to 4 Only USB3.0 mode	<CMD>,[active channel]<CR>
'0'	Select no USB port	<CMD>,0<CR>
'C'	Get active USB port	<CMD>,[active channel]<CR>
'I'	Get electric current value	<CMD>,[current value]<CR>
'Z'	Set offset current value (set the current sensor value as base value)	<CMD>,[offset value]<CR>
'X'	Clear current offset value	<CMD>,[offset value(=0)]<CR>
'V'	Get product version	"USB-205 Ver.***"<CR>
other	-	"Undefined command"<CR>

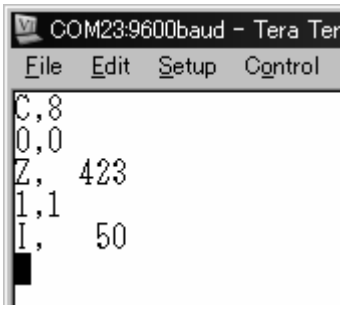
<CMD> : response sending command

<CR> : Carriage Return (0x0D)

Current value is monitored by mounted current sensor circuits. It is not calibrated. Please think the value is just for reference.

Communication example

First clear all USB connections, then set current offset value, and set USB port ch.1 active and get the value 50 as current value.



4. Additional Documentation and User Support

The following documents and other supports are available at

http://www.hdl.co.jp/en/faspc/USB/usb-205

- Device Driver
- Outline Drawing

… and more.

5. Warranty and Compensation

Please refer to the following URL for the warranty.

http://www.fa.hdl.co.jp/en/fa-warranty.html

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