JDAM-9520A

Isolated RS-232 to RS-422/485 Converter

USER'S MANUAL (V1.0)

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1. Introduction

The RS-485 standard supports half-duplex communication. But with a special I/O circuit in the JDAM-9520A automatically senses the direction of the data flow and switches the transmission direction.
In addition, the JDAM-9520A also provides a flexible function called “Auto baud rate detector” which can convert RS-232C signals to RS-422/485 signals at any baud rate automatically without setting switches.

This RS-485 control is completely transparent to the user and software written for half-duplex RS-232 works without any modification.

The JDAM-9520A's Opto-isolators provide 3000 Vdc of isolation to protect the host computer from ground loops and destructive voltage spikes on theRS-485 data lines.

JDAM-9520A also offer internal surge-protection on their data lines. Internal high-speed transient suppressors on each data line protect the modules from dangerous voltages levels or spikes.

2. Features

- Auto direction flow control on RS-485
- Auto switching for RS-232 to RS-422 or RS-485(jumperless)
- Auto switching Baudrate up to 115.2 Kbps
- Minimum 3000 V DC isolation protection
- Transient suppression on RS-485 data lines
- Networking up to 4000 feet
- Reserved space for termination resistors(R1)
- Power and data flow indicator for troubleshooting
- Power requirement: +10 to +30 Vdc
- Mounts easily on DIN-rail or panel

3. Specifications

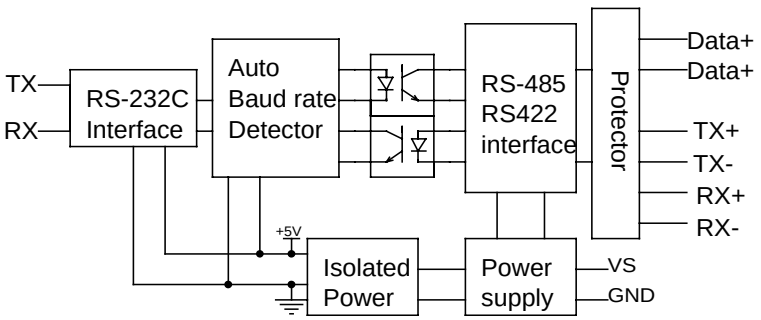
- Power requirement: Unregulated +10 to +30 V DC with protection from power reversals
- Case: ABS with captive mounting hardware
- Converted signals: RS-232 to RS-422 or RS-485 Auto switching(jumperless)
- Accessories (Supplied):NYLON DIN-rail Mounting Adapter SECC Panel Mounting Bracket
- Plug-in screw terminal wiring: Accepts AWG 1-#12 to #22 (0.5 to 2.5 mm) wires
- Auto switching Baud rate (bps):300 ~ 115.2 K BPS
- Transmission and Receiving LED indicator
- Isolation voltage: 3000 V DC
- Isolation Side: RS-232
- RS-232 interface connector: Female DB-9
- RS-422/RS-485 connector: plug-in screw terminal
- Power consumption: 1.2 W
- Operating temperature:0 ~ 70 °C (32 ~ 158 °F)
- Storage temperature:-25 ~ 85 °C (13 ~ 185 °F)
- Humidity: 5 ~ 95%, non-condensing

4. Power supply

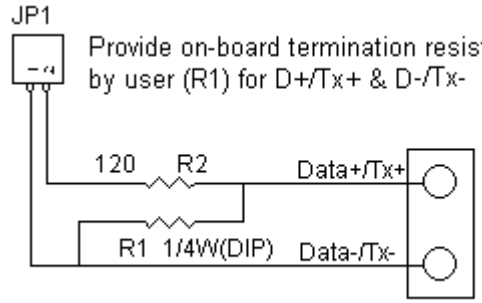
JDAM modules are designed to accept industry standard +24 Vdc unregulated power. Operation is guaranteed when using any power supply between +10 and +30 Vdc

Power ripples must be limited to 5V peak to peak while the voltage in all cases must be maintained between +10 and +30 Vdc. All power supply specifications are referenced at module connector.

5. Block diagram



6. RS-422 / 485 Termination Resistor

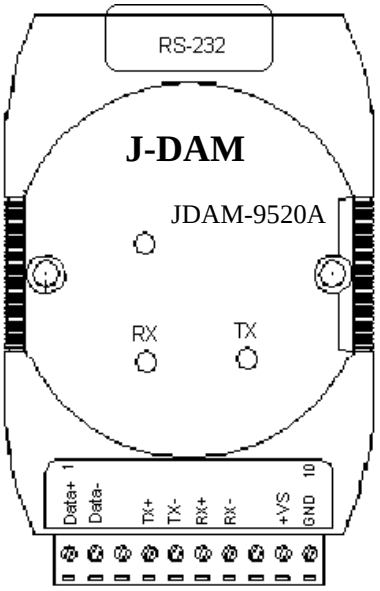


Termination Resistor

* Termination resistor "R1" for Data+/Tx+ & Data-/Tx-

If the length of RS-485 is about 1.2KM,try 120 ohm first.
If the length of RS-485 is about 600M,try 220 ohm first.
If the length of RS-485 is about 300M,try 330 ohm first.

7. Block diagram



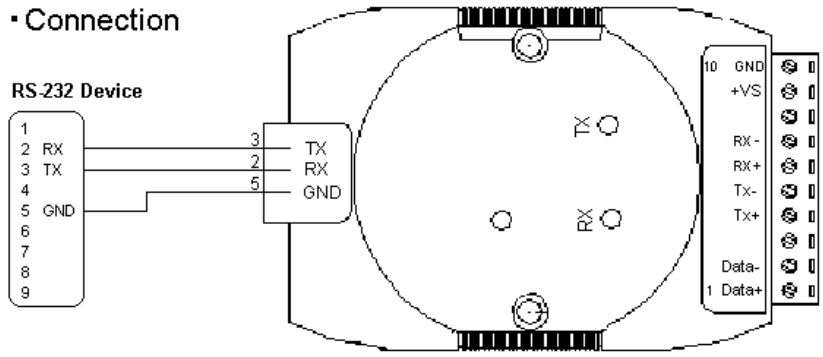
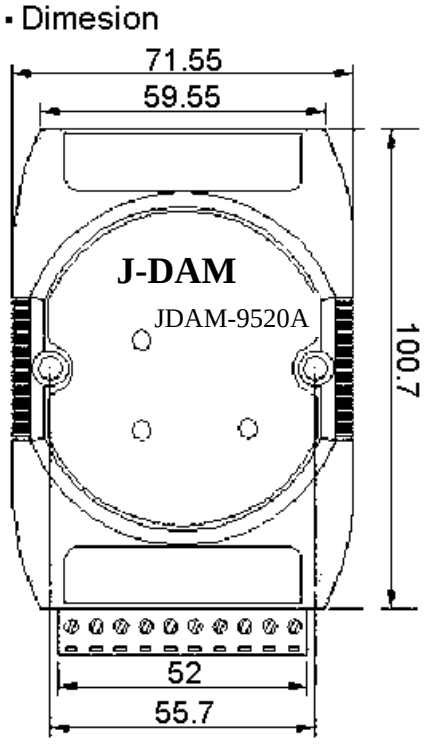
Pin Defiitions

Pin No.	Name	Description
1	Data+	RS-485 transmission line, positive
2	Data-	RS-485 transmission line, negative
3		
4	TX+	RS-422 transmission line, positive
5	TX-	RS-422 transmission line, negative
6	RX+	RS-422 receive line, positive
7	RX-	RS-422 receive line , negative
8		
9	+VS	+10 to +30VDC
10	GND	Ground

RS-232 D-type Connector

1	NC.	
2	RX	RS-232 Receive line
3	TX	RS-232 Transmission line
4	NC.	
5	GND	RS-232 Signal Ground
6,7,8,9		NC.

8. Connection



9. Dimensions