

DAM-3216

User's Manual



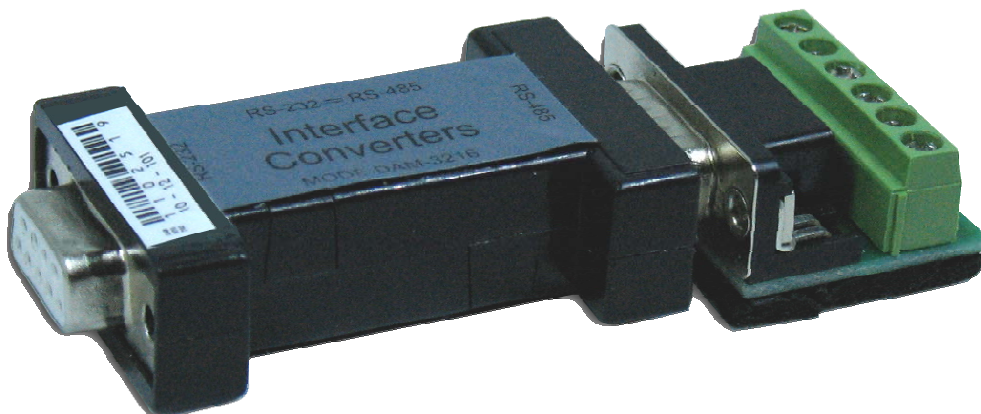
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DAM-3216 Module

Overview of Module Function

DAM-3216 is General Purpose RS232/RS-485 converter, compatible with RS-232, RS485 standards, it is able to convert single-ended RS-232 signal to balanced differential RS-485 signal, and the converter can extend communication distance to 1.2Km. Because it uses the "RS-232 charge-pump" drive, so no external power supply is needed. It does not need to initialize the RS-232 serial port by the available power, it is with zero delay automatic send and receive internal conversion, unique I/O circuit automatic control data flow direction, does not need any handshaking signals (such as RTS, DTR, etc.). Thus ensuring the program is written in the RS-232 half-duplex mode without changing can run in the RS-485 mode. The transfer rate of the converter is from 300bps to 115.2Kbps. It can be applied to between the host computers, microcontroller and host computer, the host computer and peripherals to constitute point to point, multipoint remote multi-machine communication networks, to achieve multi-unit response communications.

Module Structure



Module Features

- Compact, using DB9 connector, with a terminal.
- Compatible with RS232, RS-485 TIA/EIA standards.
- Automatic send / receive data without external flow control signals (RTS)
- Power Supply: a unique serial charge pump drive technology, no external power supply, the real three-wire (TXD.RXD.GND) system for communications, does not need to initialize the serial port.
- Be able to connect up to 32 network devices
- Communication Distance: 1,200 meters
- Communication Speed: 300BPS-115.2KBPS.
- Transmission Media: twisted pair or shielded cable

- Working Mode: asynchronous full-duplex (RS-485)
- Used for all communication software, plug and play.
- Dimensions: 63mm × 33mm × 17mm
- Operating Environment: 0°C to 70 °C, relative humidity 5% to 95%

Connector

RS-232C pin assignment

DB9(PIN)	RS-232C Interface
1	NC
2	Sending data, TXD
3	Receiving data, RXD
4	Data terminal ready, DTR
5	Ground (GND)
6	Data unit is ready, DSR
7	Request to send, RTS
8	Clear to send, CTS
9	

RS-485 output terminal

Pin	Output Signal	RS-485 half-duplex wiring
1	T/R+	RS-485(A+)
2	T/R-	RS-485(B-)
3	RXD+	NC
4	RXD-	NC
5	GND	Ground
6	VCC	+5Vstandby power input

Hardware Installation and Application

This produce has universal adapter with DB9, output interface with a common terminal, use twisted pair or shielded cable, connection, removal is very convenient. T/R+, R/R- representatives to A+/B- (receive and send), GND is public ground.

DAM-3216 interface converter supports the following two types of communication:

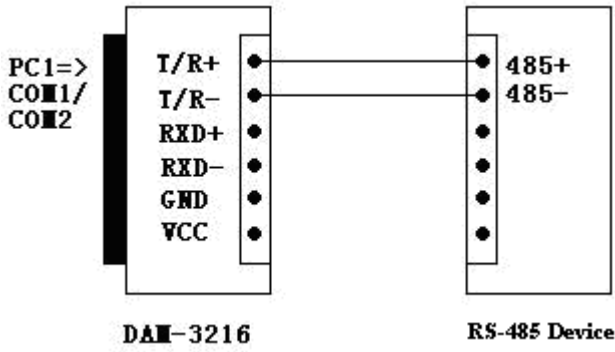
1. point to point/two-wire half-duplex
2. multipoint/two-wire half-duplex

When the converter is used as half-duplex connection, in order to prevent signal reflection and interference, we need to add a matching resistance (120ohms, 1/4 W) in the circuit.

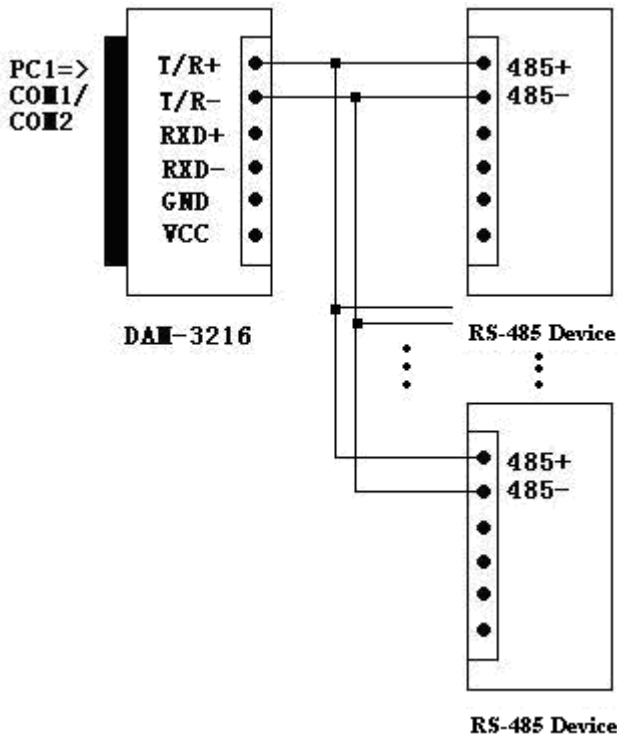
Communication Connection Diagram

RS-232 to RS-485 Converter

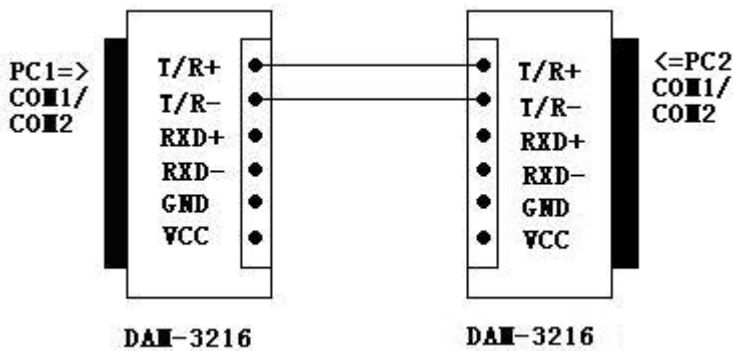
1. point to point/two-wire half-duplex



2. multipoint/two-wire half-duplex



3. The half-duplex communication of multiple DAM-3216 interface converters



Common Faults and Exclusion Method

1. Data Communication Failure

- Check the RS-232 interface, whether the wiring is correct.

- Check the RS-485 output interface, whether the wiring is correct.
- Check whether the terminals are connected well.

2. Data loss or errors

- Check the transfer rate and the format are consistent of the data communications equipment at both ends.