Ghielmetti Model 204A High-Speed Paper Tape Reader

Description

The Ghielmetti FER204A Paper Tape Reader connects via a DB25S connector that has pins for both RS232C and 20 mA current loop connection. It uses either the RS232C handshake signals or non-standard current loop signals to control reading and data flow from the paper tape reader.

Modification

The RS232C RTS output signal from the FER204A has non-standard polarity. Interestingly, there is a switch-selectable option for changing the polarity of the current-loop output signal, but not for the RS232C output signal. A simple modification to the RS-232C board of the FER 204A allows this same option switch to change the polarity of the RS232C RTS output signal:

1. Cut the trace from D3 pin 6 to U5 pin 2 (on the component side near D3 pin 2)
2. Install a jumper from D3 pin 4 to U5 pin 2 (on the solder side)

This modification can be avoided by simply not using the RTS output from the FER204A. It does not serve an important purpose anyway.

To connect the RTS output also to the DTR output (RS232C pin 20), an additional jumper is installed (on the solder side of the RS 232C board) at option jumper location P3. (This jumper is near U5, and is most easily installed on the solder side of the RS-232C board.)

Switch Settings

SW1 – Baud Rate Select (Rotary Switch)

Baud Rate	Setting	Note
50	D	
75	C	
110	0	
134.5	B	
150	1	
200	A	
300	2	
600	9	
1200	4	
1800	5	
2400	3,8	
4800	6	
9600	7	My setting

SW2 – Data Format (5-Position DIP Switch)

Position	Function	Function	My Setting
1	Parity	Open=Even, Closed=Odd	Closed
2	Parity Enable	Open=Parity Off, Closed=Parity On	Open
3,4	Word Length	3,4=Open,Open: 8-bit 3,4=Closed,Open: 7 bit 3,4=Open,Closed: 6 bit 3,4=Closed,Closed: 5 bit	Open,Open
5	Stop Bits	Open= 2 Stop Bits (1.5 if Word Length=5) Closed=1 Stop Bit	Closed

SW3 – Various Options (5-Position DIP Switch)

Position	Function	Function	My Setting
1	RTS Polarity	Open = Active High RTS (+6V) Closed = Active Low RTS (-6V)	Closed
2	CTS Polarity	Open=Active Low CTS and DSR (-6V) Closed=Active High CTS and DSR (+6V)	Open
3	Current Loop Data Polarity	Open: current=Start Bit Closed: current=Stop Bit	Closed
4	Current Loop Ready	Open: disconnects Ready signal from DB25S pin 24	Closed
5	Double Buffer	Open: 2-byte double buffer data Closed: 1-byte buffer for data	Open

DB25S Pinout

Pin	RS232C Sig	Direction	Polarity	Note
2	TxD	FER204A→	RS232C Standard	
3	RxD	FER204A←		Connected only to terminal X10
4	RTS	FER204A→	Active Low	Same as pin 20 (DTR)
5	CTS	FER204A←	Active Low	Drive pins 5 & 6 together
6	DSR	FER204A←	Active Low	Drive pins 5 & 6 together
7	GND			Signal Ground
20	DTR	FER204A→	Active Low	Same as pin 4 (RTS)
9	RUN+	FER204A←		20 mA signal. Do not connect.
10	RUN-	FER204A←		20 mA signal. Do not connect.
18	DATA+	FER204A→		20 mA signal. Do not connect.
21	DATA-	FER204A→		20 mA signal. Do not connect.
24	READY+	FER204A→		20 mA signal. Do not connect.
25	READY-	FER204A→		20 mA signal. Do not connect.