

## RS-232 Interface

### Specifications

Data transmission:	Serial
Synchronization:	Asynchronous
Handshaking:	DTR/DSR or XON/XOFF control
Signal levels:	MARK = -3to -15 V: Logic "1"/OFF SPACE = +3to +15 V: Logic "0"/ON
Baud rate:	1200, 2400, 4800, 9600, 19200, 38400, 57600 bps [bps: bits per second]
Data word length:	7 or 8 bits
Parity Settings:	None, even, or odd
Stop bits:	1 or 2 stop bits
Connector (printer side):	Female DSUB-25 pin connector (standard)



### Signal definition

Pin number	Signal name	Signal direction	Function
1	FG	-	Frame ground
2	TXD	Output	Transmit data
3	RXD	Input	Receive data
5	NC	-	Not connected
6	DSR	Input	This signal indicates whether the host computer can receive data.
7	SG	-	Signal ground
8-19	NC	-	Not connected
4, 20	DTR	Output	This signal indicates whether the printer is busy.
21-25	NC	-	Not connected

### Handshake timing sequence

#### DTR/DSR transmit timing (hardware handshake)

	Printer status	Action
DTR 1	When the printer goes online after turning on the power.	SPACE
DTR 2	When the receive buffer is released from the buffer full state.	SPACE
DSR	When the receive buffer of host becomes full check this signal.	SPACE

*XON/XOFF transmit timing (software handshake)*

	<b>Printer status</b>	<b>Action</b>
XON transmission 1	When the printer goes online after turning on the power.	TRANSMIT
XON transmission 2	When the receive buffer is released from the buffer full state.	TRANSMIT
XOFF transmission	When the receive buffer of host becomes full check this signal.	TRANSMIT

**Definition of “receive buffer full”**

- ▶ *When the receive buffer capacity is set to 4 KB:*  
When the remaining space in the receive buffer drops to 128 bytes, the printer status becomes “buffer full” and it remains “buffer full” until the space in the receive buffer increases to 146 bytes.
- ▶ *When the receive buffer capacity is set to 45 bytes:*  
When the remaining space in the receive buffer drops to 2 bytes, the printer status becomes “buffer full” and it remains “buffer full” until the space in the receive buffer increases to 18 bytes.