

# User Manual

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## ASeries A601

Interface Converter  
V.24 ↔ V.35



*The interfacing specialists*

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# A601 User Manual

Version 1.10

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## 1.0 PRODUCT DESCRIPTION

The A Series A601 is a CCITT V.24 (RS-232) to CCITT V.35 interface converter and provides bi-directional data communication between the V.24 and V.35 communication standards at speeds of up to 64Kbits/second. No changes are made to either data or timing signals and the A601 is transparent to data and any introduced protocol.

Both the V.35 and V.24 ports of the A601 may be configured to either Data Communications Equipment (DCE) or Data Terminal Equipment (DTE) via an internal 34-pin jumper. Possible A601 configurations are as follows:

- V.35 (DCE) to V.24 (DTE)
- V.35 (DTE) to V.24 (DCE)

The physical layout of the A Series A601 is as follows:

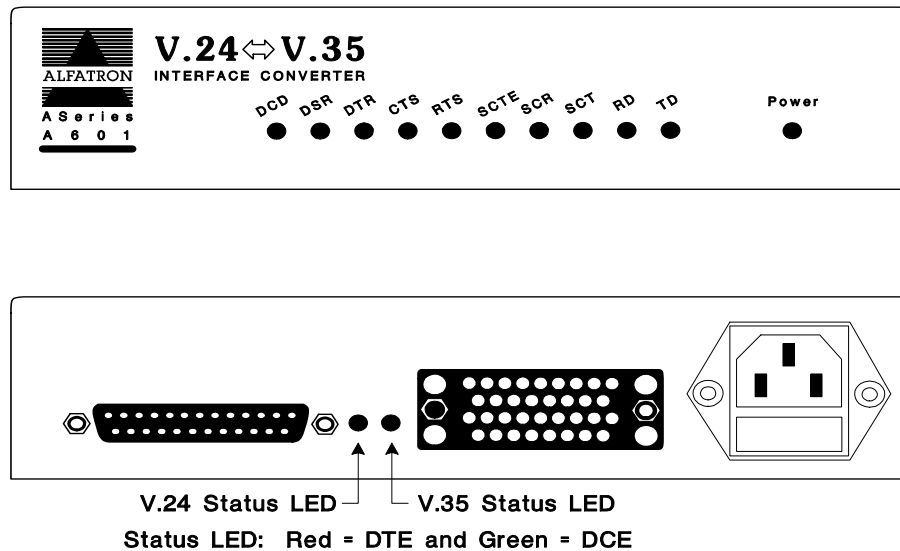


Figure 1-1 A601 viewed from front and rear

### Light Emitting Diodes (LEDs) on Rear Panel

The two LEDs shown on the rear panel in Figure 1-1 are a convenient method of identifying the DTE or DCE status of each port:

- Bi-colour LED is 'RED' if corresponding port is 'DTE'.
- Bi-colour LED is 'GREEN' if corresponding port is 'DCE'.

## 2.0 INSTALLATION

### 2.1 Selecting DCE or DTE

Before installing the A601 please make sure that the 34-way jumper is inserted into the correct DCE or DTE position to meet your requirements. In the majority of cases where synchronous serial communications is used, the DCE will provide the 'Clock Signal' to the DTE devices, therefore the A601 supports the following two configurations of V.24 and V.35:

- (i) V.24-DTE (Terminal) to V.35-DCE (Modem)
- (ii) V.24-DCE (Modem) to V.35-DTE (Terminal)

These configurations are selected by removing the cover of the A601 and inserting the 34-pin polarised jumper into the appropriate socket, J201 or J202, located on the Printed Circuit Board (PCB) as shown below:

**Note:** The RED stripe on the 34-pin jumper must be towards the configuration description boxes on the PCB as shown here.

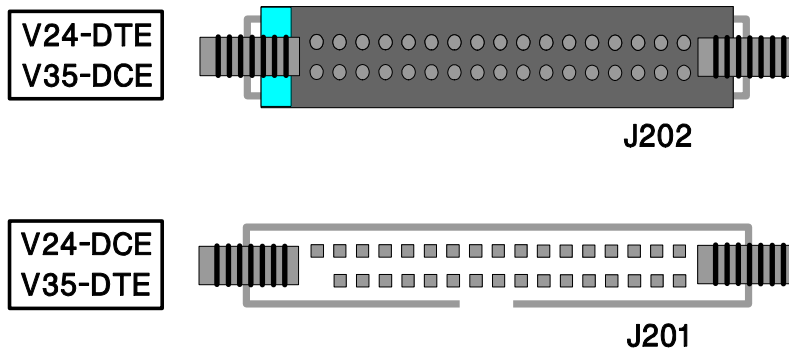


Figure 2-1 Configuration jumper blocks on PCB

**WARNING:** 240Volt power must be removed from the A601 before the cover is removed and the 34-pin jumper re-located.

Two combinations which are NOT supported by the A601 are as follows:

- (iii) V.24-DTE (Terminal) to V.35-DTE (Terminal)
- (iv) V.24-DCE (Modem) to V.35-DCE (Modem)

In the case of DTE to DTE (iii), no timing source exists for synchronous communications as timing is normally supplied by the DCE device.

In the case of DCE to DCE (iv), two timing sources exist and this would create an ambiguous situation.

## 2.2 Front Panel LED Indicators

The LED Indicators in the A601 provide a function similar to that of a breakout box. The signal names correspond to the port which is selected as DTE. For example, if the A601 is configured as V.24 (DTE) / V.35(DCE) and the 'RD' LED is active then this refers to the activity on the V.24 port 'RD' line.

The A601 has eleven LED indicators on its front panel. The LED marked 'Power' is Yellow and indicates that the A601 has operating power. The remaining ten LEDs are Red / Green bi-colour indicators which may be divided into the following two groups:

(a) Handshaking and Status Signals - RTS, CTS, DTR, DSR and DCD.

The Handshaking and Status lines are monitored directly from the signal lines and displayed according to the following convention:

- Bi-colour LED is 'RED' if corresponding V.24 / V.35 line is 'HIGH'.
- Bi-colour LED is 'GREEN' if corresponding V.24 / V.35 line is 'LOW'.

(b) Data and Clock Signals - RD, TD, SCR, SCT, SCTE

The Data and Clock lines are monitored after conversion of the corresponding signal to a common TTL level and displayed according to the following convention:

- Bi-colour LED is 'RED' if corresponding TTL signal is 'LOW'.
- Bi-colour LED is 'GREEN' if corresponding TTL signal is 'HIGH'.

## 2.3 Rear Panel LED Indicators

The two bi-colour LEDs on the rear panel are shown in Figure 1-1. They identify the DTE or DCE status of the port closest to that LED and are determined by the internal 34-pin jumper. These LEDs provide a convenient method of identifying the status of each port without opening the case:

- Bi-colour LED is 'RED' if corresponding port is 'DTE'.
- Bi-colour LED is 'GREEN' if corresponding port is 'DCE'.

### 3.0 CABLE REQUIREMENTS

Alfatron Pty Ltd recommends the use of shielded cable with all of its products. Shielding reduces Electro Magnetic Radiation and improves noise immunity. This helps minimise interference to other equipment and will improve communications reliability.

The recommended cable construction is as follows:

- Take the shield (surrounding cable wires) and solder it to the Frame Ground (FG) pin. If FG is not available, use Signal Ground (SG) but in this case always use a separate wire for ground which is connected at both ends.

If a metalised backshell is used then it is preferred that the cable shield make 360° contact with the backshell at the point of entry.

- The shield must be connected at both ends of the cable.

### 4.0 FACTORY SETTINGS

The A601 is factory pre-set to the following configuration:

- V.24 (DCE) to V.35 (DTE)

## 5.0 INTERFACE PIN ASSIGNMENTS

### 5.1 V.24 Interface Pin Assignments

The direction of the signal lines depends on whether the A601 V.24 port is configured as DTE or DCE, refer to Section 2.1.

Pin No.	Signal Name	Full Signal Name	A601 Port V.24 - DTE	A601 Port V.24 - DCE
1	FG	Frame Ground	-	-
2	TD	Transmit Data	Output	Input
3	RD	Receive Data	Input	Output
4	RTS	Request To Send	Output*	Input*
5	CTS	Clear To Send	Input*	Output*
6	DSR	Data Set Ready	Input*	Output*
7	SG	Signal Ground	-	-
8	DCD	Data Carrier Detect	Input*	Output*
15	SCT	Transmit Clock	Input	Output
17	SCR	Receive Clock	Input	Output
18	LL	Local Loop Back	Output**	Input**
20	DTR	Data Terminal Ready	Output*	Input*
21	RL	Remote Loop Back	Output**	Input**
24	SCTE	Transmit Signal Timing (DTE)	Output	Input
25	TM	Test Mode	Input**	Output**

Note: \* This signal is passed through the A601 and is not actively driven by the A601. The status of these signals is monitored and displayed on the front panel LEDs.

\*\* This signal is not passed through and is not supported by the A601.

## 5.2 V.35 Interface Pin Assignments

The direction of the signal lines depends on whether the A601 V.35 port is configured as DTE or DCE, refer to Section 2.1.

Pin No.	Signal Name	Full Signal Name	A601 Port V.35 - DTE	A601 Port V.35 - DCE
B	SG	Signal Ground	-	-
C	RTS	Request To Send	Output*	Input*
D	CTS	Clear To Send	Input*	Output*
E	DSR	Data Set Ready	Input*	Output*
F	DCD	Data Carrier Detect	Input*	Output*
H	DTR	Data Terminal Ready	Output*	Input*
P	SD(a)	Send Data (a)	Output	Input
R	RD(a)	Receive Data (a)	Input	Output
S	SD(b)	Send Data (b)	Output	Input
T	RD(b)	Receive Data (b)	Input	Output
U	SCTE(a)	Serial Clock Transmit (a)	Output	Input
V	SCR(a)	Signal Clock Receive (a)	Input	Output
W	SCTE(b)	Serial Clock Transmit (b)	Output	Input
X	SCR(b)	Signal Clock Receive (b)	Input	Output
Y	STR(a)	Signal Clock Transmit (a)	Input	Output
AA	STR(b)	Signal Clock Transmit (b)	Input	Output
BB	RL	Remote Loopback	Output**	Input**
J	LL	Local Loopback	Output**	Input**
K	LT	Test Mode	Input**	Output**

Note: \* This signal is passed through the A601 and is not actively driven by the A601. The status of these signals is monitored and displayed on the front panel LEDs.

\*\* This signal is not passed through and is not supported by the A601.

## 6.0 SPECIFICATIONS

**V.24 Port:** CCITT V.24 / EIA RS-232C  
Select as DTE or DCE  
DB-25 female connector

**V.35 Port:** CCITT V.35 Compatible  
Select as DTE or DCE  
34-pin V.35 female connector

### Front LED Indicators:

TD	Transmit Data	(Bi-colour Red/Green)
RD	Receive Data	(Bi-colour Red/Green)
TC	Transmit Clock	(Bi-colour Red/Green)
RC	Receive Clock	(Bi-colour Red/Green)
SCTE	Serial Clock Transmit External	(Bi-colour Red/Green)
RTS	Request To Send	(Bi-colour Red/Green)
CTS	Clear To Send	(Bi-colour Red/Green)
DTR	Data Terminal Ready	(Bi-colour Red/Green)
DSR	Data Set Ready	(Bi-colour Red/Green)
DCD	Data Carrier Detect	(Bi-colour Red/Green)
Power	Power Indicator	(Yellow)

**Rear LED Indicators:** V.24 Port Status DTE / DCE (Bi-colour Red/Green)  
V.35 Port Status DTE / DCE (Bi-colour Red/Green)

**Power Supply:** 240V AC 50Hz  
Standard IEC male socket

**Dimensions:** 45mm x 120mm x 190mm

**Weight:** 920 grams

**Operating Temperature:** 0° to 40° C

**Storage Temperature:** -20° to 70° C

*All specifications subject to change without notice*



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## DECLARATION OF CONFORMITY

according to the European Commissions EMC Directive 89/336/EEC

**We,** Name of Manufacturer: ALFATRON PTY. LTD  
**of,** Address of Manufacturer: UNIT 9, 36 NEW ST.  
RINGWOOD VIC 3134  
AUSTRALIA

Australian Company Number: ACN: 005 410 819

**declare under sole responsibility that the product:**

Product Name: ASeries V.24 to V.35  
Interface Converter

Model Number: A601

**to which this declaration relates is in conformity with the following standards:**

CISPR-22 / EN 55022 class B	EMI from Information Technology Equipment (ITE)
IEC 801-2 / prEN55024-2	Electro Static Discharge Immunity
IEC 801-3 / prEN55024-3	Radiated RF Immunity
IEC 801-4 / prEN55024-4	Electrical Fast Transients Immunity