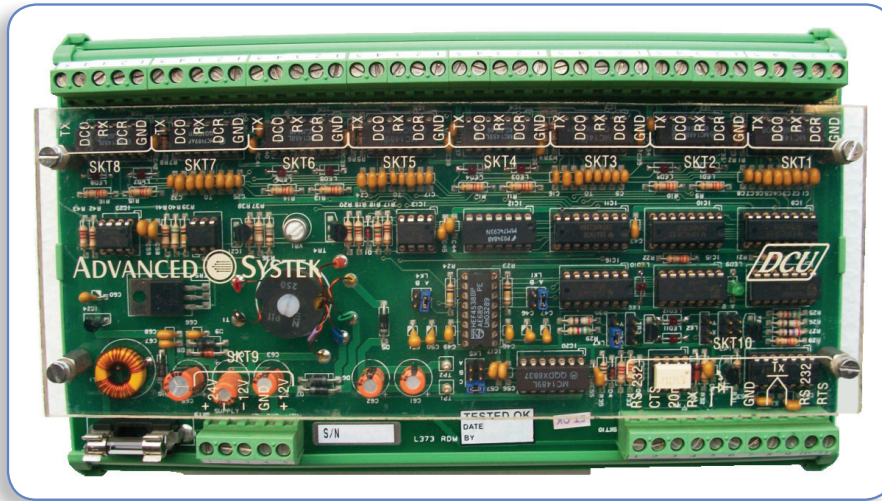


# Data Concentrator Unit (DCU)

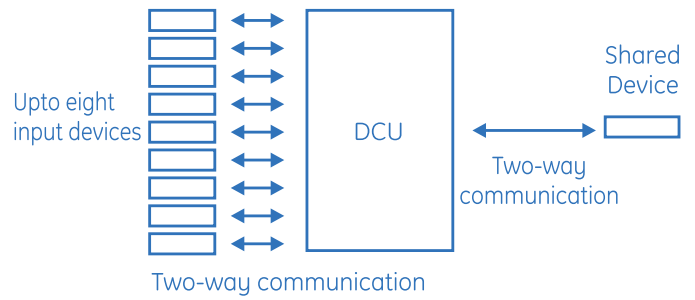


## Salient Features

- 8 full duplex RS232c connections into DCU
- The shared device interface can be Rs232c, 20mA loop or Microbus
- Transmission speeds up to 19.2K baud on Rs232c
- Handshake signals on the 8 devices provide arbitration
- Configurable handshake delays
- LEDs aid in establishing communication
- Terminal block allows for easy connection
- DIN RAIL mounting: top hat and asymmetric

The DCU (Data Concentrator Unit) is a serial data multiplexer designed to allow eight input devices to talk to a single shared device. It is ideal for driving a common printer or modem and for many other applications. Information from the shared device can be broadcast to all other devices. In this manner a host computer can communicate with up to eight slaves as shown below. If the Rx and Tx lines of the shared port are linked any one of the eight devices can broadcast to the others.

The Data Concentrator Unit polls the RTS lines of the input devices using the DCR terminals. When it finds an input device wishing to transmit (DCR line at +Ve) it



stops polling, asserts a positive RTS level to the shared device and enables the data channel with the input device.

The DCU now waits for a positive CTS from the shared device, triggering a delay. This delay may be set using bit links to 1,100, 200, or 300ms. After the delay period a CTS positive level is asserted from the DCO terminal to the selected input device CTS. At the end of the message when the originating device removes its DCR signal (returns it to a -Ve level) a second configurable delay is enabled. This delay is similar to the CTS delay but has values of 1, 50, 100 and 150 ms. It holds the RTS to the shared device to allow the final character of the message to be transmitted before the data channel is closed. As soon as the data channel is closed, polling recommences.

## DCU Specification

Signals for eight input devices	Rs232c using Tx, Rx, DCR, DCO and Common
Signals for shared device	RS232c using Tx, Rx, RTS, CTS and Common or 20mA and MicroBus using Tx+, Tx- and Rx+, Rx-
Power	24V (18-30Vdc)
Power Consumption	2W quiescent up to 5W active
Size	120mm x 220mm x 40mm
Weight	0.75kg

## LED Indication

LEDs 1-8	Indicate Channel 1-8 open respectively (Only one at a time)
LEDs 9	Indicates Rx from the shared device
LEDs 10	Indicates Tx to the shared device
LEDs 11	Indicates an active 20mA or master MicroBus Tx
LEDs 12	Indicates an active 20mA or master MicroBus Rx

## Eight Input Ports SKT 1-8

Pin 1	GND Ground
Pin 2	DCR Connect to the RTS Normally -12V, goes to of the input devices +12V to request channel
Pin 3 Rx	Data from the input device Tx terminal RS232c levels
Pin 4	DCO Connect to the CTS normally -12V, goes to of the input device +12V when channel open
Pin 5	Tx Data to the input device Rx terminal RS232c levels

## Power Connector SKT 9

Pin 1 +ve Supply	18-30 Vdc. (There is no DC connection between the power supply and signal)
Pin 2 -ve Supply	
Pin 3 -12V Output	These outputs are directly connected to the DCU internal +/- 12V power rails and are available for maximum load of 0.5 watt and must be fused with fast blow fuses in both +Ve and -Ve lines of 50 mA
Pin 4 GND	
Pin 5 +12V Output	

## Shared Telemetry Port SKT 10

The terminals used depend on the type of telemetry being utilised. The table indicates the terminal use and bit link position.

Interface Type	Connections (Terminal No)				Link Positions				
	Rx+	Rx-	Tx+	Tx-	2	3A	3B	5	6
RS232	1	7	10	7	-	-	-	C	-
20mA Active	4	3	9	7	Y	Y	X	E	X
20mA Passive	3	6	8	9	Y	Y	Y	B	Y
MicroBus Master	4	3	9	7	X	X	X	A	X
MicroBus Slave	5	6	8	8	X	Y	Y	A	Y

## Universal Terminals

Pin 2	Clear to send (from shared device) RS232c levels normally -12V, +12V when clear to send
Pin 11	Request to send (to shared device) RS232c levels normally -12V, +12V for request to send

## RTS Drop Out Delay Selection

LK1	None	1ms
	A	50 ms
	B	100 ms
	A+B	150 ms

## CTS Cut-in Delay Selection

LK4	None	1 ms
	A	100 ms
	B	200 ms
	C	300 ms



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