EQUIPMENT INSTALLATION MANUAL

for the

GDC21 DATA CONVERTER

P/N 1035-4000-01-001( )

ARINC 429 TO ARINC 575

DAC International
6702 McNeil Drive
Austin, TX 78729

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RECORD OF REVISIONS

REV	DESCRIPTION	DATE	APPROVED
IR	INITIAL RELEASE	10/30/02	JEM

INTRODUCTION:

This manual contains installation data and specifications for the DAC International Model GDC21 Data Converter, Part Number 1035-4000-01-001( ).

DESCRIPTION:

GDC21 Data Converters with software version 001( ) are designed to receive ARINC 429 data from a Digital Air Data System (DADS). The GDC21 converts the data content and update rates to comply with ARINC 575 format, and then transmit the modified data at the required update rates.

- Receive ARINC 429 Binary labels:
  - 203 Pressure Altitude
  - 206 Computed Airspeed
  - 211 Total Air Temperature
- Transmit ARINC 575 Binary labels:
  - 203 Pressure Altitude
  - 206 Computed Airspeed
  - 211 Total Air Temperature

PART NUMBERS:

The GDC21 Data Converter is available under the following part number:

1035-4000-01-001( ) ARINC 429 to 575 Converter

Software part number, where ( ) contains the number zero for initial release, or any letter, A – Z to denote a minor change.

REGULATORY COMPLIANCE:

Software

The Model GDC21 software was developed in accordance with RTCA/DO-178B to criticality level C.

SUPPLIED EQUIPMENT

Each Data Converter is shipped with the following items:

Part Number	Description	Qty
1035-4000-01-001( )	GDC21 Data Converter	1
1035-4200-01	Installation Kit, GDC21 Data Converter	1

Complete installation kits are available under kit part number 1035-4200-01. Individual pieces are available under the part numbers shown. Contact DAC International sales to place orders.

Part Number	Description	Qty
1035-4200-01	Installation Kit, GDC21	
M24308/2-2F	Connector, Receptacle, 15 pin D-Sub	1
M39029/63-368	Socket, Crimp Style, female	15
P10053	Slide Latch Kit	1
P10067	Backshell, 15-Pin D-Sub	1
1035-2510-01	Equipment Installation Manual for the GDC21	1

SPECIFICATIONS:

Physical:

The GDC21 attaches to the airframe via four mounting holes. See the paragraph titled Outline Drawing for further details.

Height.....1.25”

Width.....5.22” (Includes mounting flange)

Depth.....3.54”

Weight.....less than 0.6 lb.

Electrical:

Input Voltage .....28 VDC Nominal

Input Current.....0.05 Amp at 28 VDC

Data Input:

Format.....ARINC 429

Baud Rate.....12.5 kBaud

Data Output:

Format.....ARINC 575

Baud Rate.....12.5 kBaud

OPERATION:

The operation of the GDC21 Data Converter fitted with software –001( ) is described in the paragraphs and tables on the following pages.

ARINC 429 Input

The GDC21 accepts low speed ARINC 429 data on pins J1-5 and J1-6 from an Air Data Computer. The following labels, when received, are converted for retransmission on the output port.

Label (octal)	**Parameter**	**Data Format**	**RX Rate (ms)**
203	Pressure Altitude	429 BNR	100-200
206	Computed Airspeed	429 BNR	62-125
211	Total Air Temperature	429 BNR	252-500

The GDC21 ignores any additional labels received from the DADS Computer.

ARINC 575 Output

The GDC21 transmits low speed data on pins J1-7 and J1-8 according to document ARINC 575.

Label (octal)	**Parameter**	**Data Format**	**TX Rate (ms)**
203	Pressure Altitude	575 BNR	62.5
206	Computed Airspeed	575 BNR	125
211	Total Air Temperature	575 BNR	500

ENVIRONMENTAL:

The GDC21 meets the environmental test categories detailed below in accordance with RTCA/DO-160D, Environmental Conditions and Test Procedures for Airborne Equipment.

NOMENCLATURE: Model GDC21 Data Converter
PART NO: 1035-4000-01-XXXX
MANUFACTURER: DAC International
ADDRESS: 6702 McNeil Drive, Austin, TX 78729

Section	Category	Remarks
4.0 Temperature and Altitude	D1	50,000 Ft Temperature controlled
5.0 Temperature Variation	B	Partially controlled temperature
6.0 Humidity	A	Standard Humidity
7.0 Operational Shock and Crash Safety	D	Fixed wing
8.0 Vibration	L, M, C	Fixed Wing – Turbojet, Turbofan, Turboprop and reciprocating
9.0 Explosion Proofness	X	Not Tested
10.0 Waterproofness	X	Not Tested
11.0 Fluids Susceptibility	X	Not Tested
12.0 Sand and Dust	X	Not Tested
13.0 Fungus Resistance	X	Not Tested
14.0 Salt Spray	X	Not Tested
15.0 Magnetic Effect	A	0.3 meter to 1.0 meter
16.0 Power Input	B	Alternator / Rectifiers
17.0 Voltage Spike	B	56 volts
18.0 AF Conducted Susceptibility – Power Inputs	B	Alternator / Rectifiers
19.0 Induced Signal Susceptibility	A	
20.0 Radio Frequency Susceptibility (Radiated and Conducted)	V	50 volts/meter
21.0 Emission of Radio Frequency Energy	B	
22.0 Lightning Induced Transient Susceptibility	X	Not Tested
23.0 Lightning Direct Effects	X	Not Tested
24.0 Icing	X	Not Tested
25.0 ESD	X	Not Tested

CONNECTOR PIN OUT:

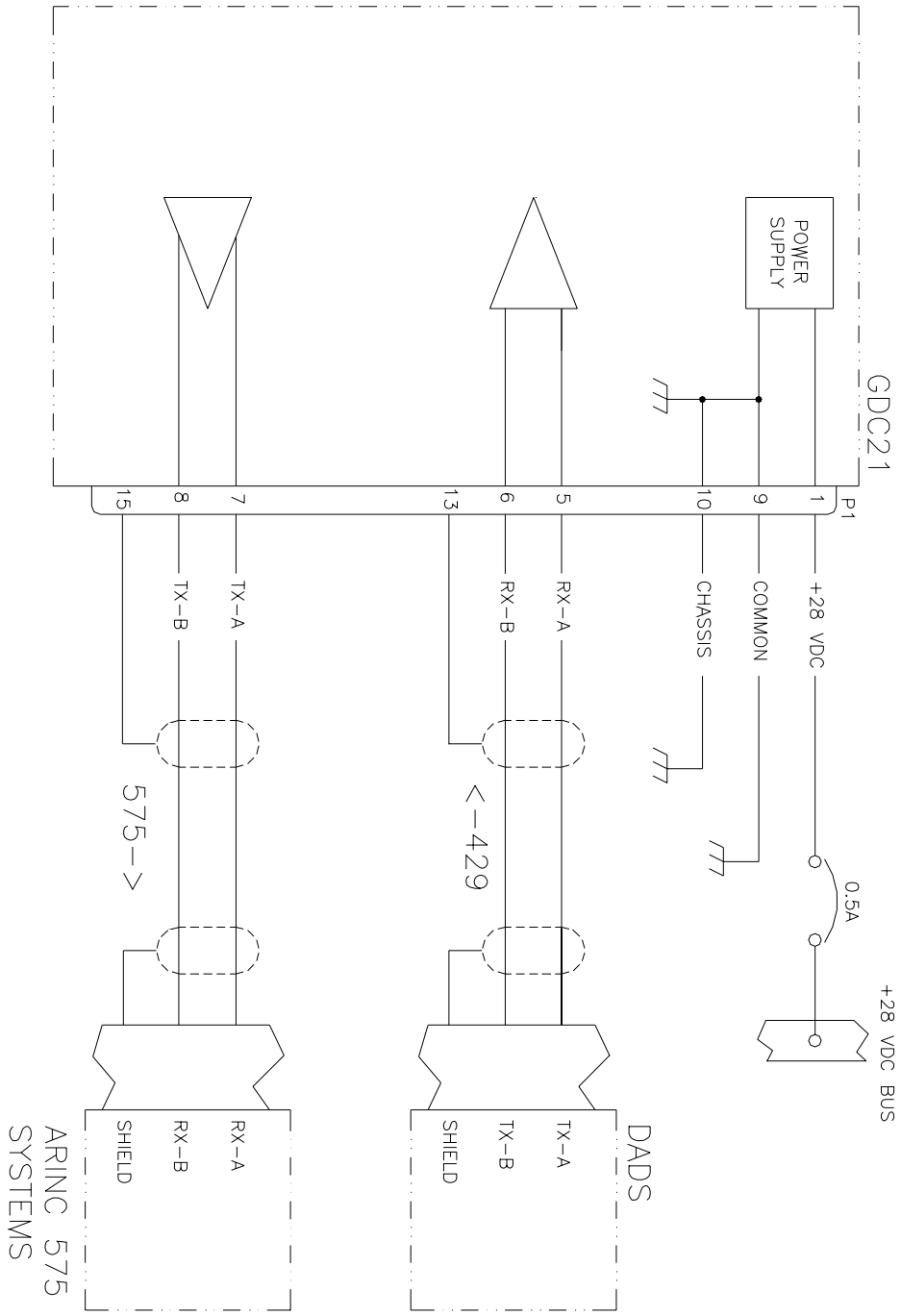
The GDC21 contains a single 15-pin male connector, J1, per MIL-C-24308, part number M24308/4-260F. The mating connector, P1, is described previously under the section “Equipment Supplied”.

Pin	Signal	Function
1	A+	28 Vdc Primary Power
2		Reserved (RS232 Output)
3		Reserved (RS232 Input)
4		Reserved (+12Vdc Vpp)
5	RX-A	429 Receive A
6	RX-B	429 Receive B
7	TX-A	575 Transmit A
8	TX-B	575 Transmit B
9	Power Common	28 Vdc Return
10	Aircraft Common	Chassis ground
11		Reserved (RS232 return)
12		Reserved (/PGM Enable)
13	Common	RX Shield
14		Spare (Common)
15	Common	TX Shield

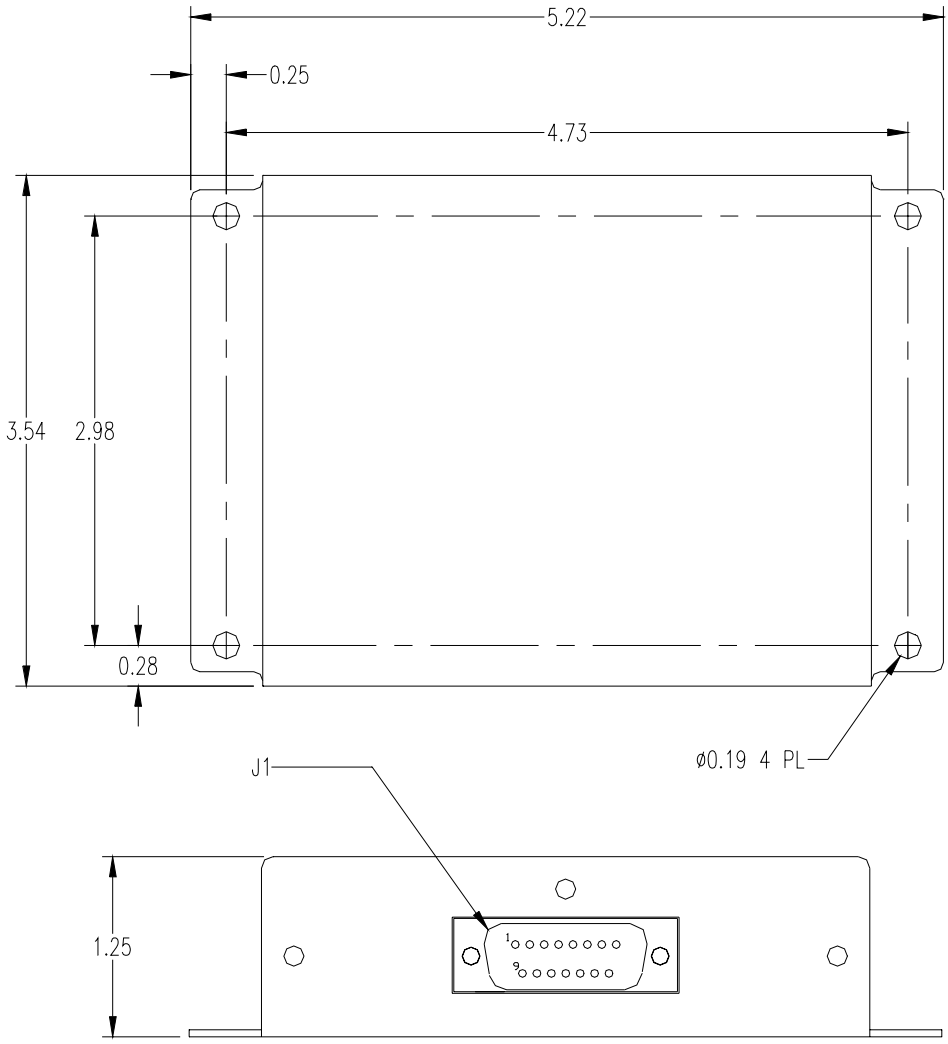
J1 Pin Description

NOTE: Do not use pins labeled Reserved. These are for factory test and In-Circuit-Programming

TYPICAL INTERCONNECT



OUTLINE DRAWING



Note: Dimensions are in inches.

SLIDE LATCH ASSEMBLY

Assemble the slide latch mechanism, part number P10053, onto the mating connector as pictured using the hardware supplied with the slide latch.