



REVUE THOMMEN AG
CH-4437 Waldenburg
20-Dec-2008

AC32 Technical Checklist

Document No. AC-CHK-AF-5035

Revision 1.0

Aircraft Type	DC3/C47 modified with turboprop engines & Sagem Glass System
Instrument NAME	DIGITAL AIR DATA COMPUTER
Remarks	AC32 NON RVSM Digital Air Data Computer , ARINC 429 Low Speed , ICAO Enc. Output & TAT Probe Input
Model Keycode (PART/TYPE)	AC32.10.21.11.AF (see appendix A2)
MOD No. / SW/HW Version	MOD 00A / SW 2.60 / HW 2.00
Configuration ID	5035
Type Identification Drawing No.	21 30130 14 B

Customer / Name / Phone	
Confirmation of correctness (Date/Signature)	

Item	Features	Specification	Standards / Options	Selections	Model Specification
1	Type & Ranges				
a	RVSM application		optional	YES/NO	NO
b	Altitude Range (S)	- 1'000 ... 53'000 ft other Range	standard specify	YES/NO	YES
c	Airspeed Range (P)	0/40 ... 450 knots other Range	standard specify	YES/NO	YES
d	MACH Range	0,000 ... 0,900 other Range	standard specify	YES/NO	YES
e	VMO	Maximum Allowable Airspeed	specify	Note 1	170kts
f	MMO	Maximum operating MACH number	specify	Note 1	0.26
2	Sensors				
a	Static Sensor		standard	--	YES
b	Pitot Sensor		standard	--	YES
3	Power Supply				
a	Primary	28 VDC	standard	--	YES
b	Secondary	Emergency supply 28 VDC	standard	--	YES
4	TAT probe input				
a	Pt500 Ohm	ARINC 706-4 / Section 4.8	optional	YES/NO Note 3	YES
b	Pt100 Ohm	EN 60751	optional	YES/NO Note 3	NO
c		TAT installation temperature correction [°C]	specify	0 °C (±10°C) Note 7	0 °C



Item	Features	Specification		Standards / Options	Selections	Model Specification
5	Discrete Inputs	0/28 VDC			Note 7	(0...5)
a	TEST	External BIT activation	High = Normal Low = activate BIT	optional	YES/NO Note 9	YES Dis. Inp. 0
c	SSEC Selection	Selects normal or alternate SSEC curve	high = Basic SSEC curve low = alternative curve	optional	YES/NO	NO
d	Zero MACH SSEC	SSEC values are set to null	high = Normal low = Zero SSEC values	optional	YES/NO	YES Dis. Inp. 1
f	ICAO Strobe	Detects Encoder Strobe signal	high = Code off low = Code on	optional	YES/NO Note 5	YES Dis. Inp. 5
g	Disable Instrument	Disables Instrument Function	high = enable low = disable	optional	YES/NO	NO
h	SDI pin A detection	Source/Destination Identifier pin A detection	high = off low = on	optional from SW 2.10	YES/NO	YES Dis. Inp. 2
i	SDI pin B detection	Source/Destination Identifier pin B detection	high = off low = on	optional from SW 2.10	YES/NO	YES Dis. Inp. 3
j	Disable CAS Correction	Selects IAS or CAS to be transmitted on ARINC label 206	high = CAS is transmitted low = IAS is transmitted	optional from SW 2.40	YES/NO	YES Dis. Inp. 4
k	Disable Mach Correction	Selects corrected or indicated MACH number to be transmitted on ARINC label 205	high = corrected MACH is transmitted low = indicated MACH is transmitted	optional from SW 2.50	YES/NO	NO
6	Discrete Outputs	0/28 VDC			Note 7	(0...2)
a	Warning Flag Valid Output Signal	28 VDC indicates valid operation (load max.14 mA)	high = valid low = Failure condition	standard	--	YES DiscOut 0
b	Warning Flag Valid Output Discrete	Indicates valid operation (Open drain, 1A)	high = valid low = Failure condition	optional from SW 2.30	YES/NO	YES DiscOut 1
c	Primary Power Fail	Indicates primary power fail if secondary power available, (open drain, 1A)	high = normal low = FAIL	optional	YES/NO	NO
d	ALT Comparison Warning	ALT Comparison Warning if difference >= xxx ft, (open drain, 1A)	high = normal low = Warning	specify from SW 2.41	YES/NO 300 ft (0...1000 ft)	NO
e	IAS low	Indicates low IAS (Open drain, 1A)	high = IAS ≥ MinIAS low = IAS < MinIAS	specify (MinIAS)	YES/NO 50 knots (0..100 knots)	YES DiscOut 2
f	On ALT	Indicates On Altitude (Open drain, 1A)	high = SEL ALT not reached low = SEL ALT reached	specify (OnALT)	YES/NO Note 8 300ms,50 ft	NO
7	Interfaces digital					
a	RS 232	For maintenance & repair		standard	--	YES
b	ARINC 429	2 transmit / 2 receive channels		standard	--	YES



Item	Features		Specification	Standards / Options	Selections	Model Specification
c	ARINC speed		- Lowspeed 12.5 kHz, full load - Highspeed 100 kHz, half load	specify	HIGH/LOW Note 3	LOW
d	Encoding Output		ICAO code / TSO-C88a	optional	YES/NO	YES
8	ARINC 429 labels		Equipment ID 006 (Air Data Systems)	Note 10		
a	203	ALTp	Pressure altitude (1013.25 mbar)	transmit	YES/NO	YES
b	204	ALTc	Baro corrected Altitude #1	transmit	YES/NO	YES
c	220	ALTc	Baro corrected Altitude #2	transmit	YES/NO	YES
d	205	MACH	Mach Number	transmit	YES/NO	YES
e	206	CAS	Computed/Calibrated Airspeed	transmit	YES/NO	YES
f	207	VMO	Maximum Allowable Airspeed	transmit	YES	YES
g				forward	NO	
h	210	TAS	True Airspeed	transmit	YES Note 4	YES
				forward	NO	
i	211	TAT	Total air temperature	transmit	YES/NO Note 4	YES
j	212	ROC	Altitude Rate	transmit	YES/NO	YES
k	213	SAT	Static air temperature	transmit	YES/NO Note 4	YES
l	215	qc	Corrected Impact Pressure	transmit	YES/NO	YES
m	217		Static Pressure	transmit from SW 2.10	YES/NO	YES
n	234		Baro Correction mb #1	transmit	YES/NO	YES
o	235		Baro Correction inHg #1	transmit	YES/NO	YES
p	236		Baro Correction mb #2	transmit	YES/NO	YES
q	237		Baro Correction inHg #2	transmit	YES/NO	YES
r	242	PT	Total Pressure	transmit	YES/NO	YES
s	270		Discrete Word #1	transmit	YES	YES
				forward	NO	NO
t	320		Magnetic Heading	forward from SW 2.00	YES/NO	YES
				transmit	YES	NO
u	350		Maintenance Word #1	forward	NO	YES
				transmit	YES	NO
v	353	IAS	Indicated Airspeed	transmit	YES/NO	YES
w	377		Equipment Identifier 006	transmit	YES/NO	YES
The following labels are available with SW version 2.11 only						
aa	102		Selected Altitude	forward also from SW 2.41	NO	YES
ab	104		Selected Vertical Speed	forward	NO	NO
ac	161		Climb Profile/Efficient Speed	forward	NO	NO
ad	244		Density Altitude	forward	NO	NO
ae	271		Discrete Word #2	forward	NO	NO
9	Functions					



Item	Features	Specification	Standards / Options	Selections	Model Specification
a	RVSM compliance	2 x 16 SSEC curves (data in appendix)	optional	YES/NO	NO
b		Automatic selection of basic or alternative SSEC curve, altitude triggered	optional	YES/NO	NO
c		Altitude trigger level [ft]	specify	(0...99'999 ft)	..
d		Altitude trigger hysteresis [ft]	default	200 ft (10...300 ft)	..
f	BIT Failure memory	Stores BIT failure events	standard		YES
g	TAT synchronisation	If only one TAT probe available	optional from SW 2.00	YES/NO Note 2	YES
11	Connections				
a	Electrical Connector	MS3112E-22-55-P	standard	--	YES
b	Mating Connector	Please order separately	optional	YES/NO	YES
c	Static Port S	1/2"-20UNJF-3B (MS 33649-5)	standard	--	YES
d	Pitot Port P	7/16"-20UNJF-3B (MS 33649-4)	standard	--	YES
12	Documents				
a		Type identification drawing	standard	--	YES
b		Test record	standard	--	YES
c		DDP	standard	--	YES
d		Installation Manual	standard	--	YES
e		CMM	optional	YES/NO	NO
f	Special execution		specify	YES/NO	NO

NOTES

- MMO required if label 207 (VMO) shall be computed
- TAT value will be synchronised if internal TAT measurement not available
- Select one of the choices
- Dependant on the choice of TAT probe input (manufacturer info required)
- Required for encoding Output, if ICAO STROBE = YES then discrete input 5 is recommended
- Temperature correction [°C] for known deviation from TAT probe installation
- Only 6 discrete inputs (0 to 5) and 3 discrete outputs (0 to 2) can be used simultaneously
- OnALT discrete output parameters: 1st param = On time: 0...1000 ms,
2nd param = hysteresis: ± 0 ... 100 ft
- If TEST = YES then always on discrete input 0
- Transmit means the information is generated by the AC32 itself
Forward means the information is forwarded only if received on ARINC 429 bus



Appendix

A1. SSEC Data (according to ARINC 706-4)

No.	Basic Curve		Alternative Curve	
	MACH _i	Delta P / P _{si}	MACH _i	Delta P / P _{si}
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A

MACH_i = indicated (uncorrected) MACH number

Delta P = P_s - P_{si}

P_s = true (corrected) static pressure, and P_{si} = uncorrected static pressure

Required data pairs:

If MACH No. < first MACH No.

If MACH No. > last MACH No.

minimum 10 ... maximum 16

Delta P / P_{si} = 0 (Null)

Delta P / P_{si} = last Delta P / P_{si} value



A3. Identification Plate Template

TSO-Nameplate

The TSO nameplate identifies the LRU by part no. and config ID no.

REVUE THOMMEN AG CH-4437 WALDENBURG			
DIGITAL AIR DATA COMPUTER			
CERTIFIED TSO-C88a, TSO-C106		WT 1000 gm (2.20 lbs)	
RTCA/DO-160D / DO-178B LEVEL A			
PART/TYPE NO AC32.10.21.11.AF		CONFIG ID 5035	
SER NO	xxxxxxx	PWR SUPPLY 28 VDC	
RANGES	-1'000 ... 53'000 FEET		
	0/40 ... 450 KNOTS		
	0.200 ... 0.900 MACH	MFR DATE month / year	
SWISS MADE	PHONE +41 61 965 22 22	info@thommen.aero	

Status Label

The status label shows the LRU's HW/SW version and MOD status.

REVUE THOMMEN AG CH-4437 WALDENBURG																		
HW version		2.00																
SW version		2.60																
MOD	HW	<input checked="" type="checkbox"/>	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	SW	<input checked="" type="checkbox"/>	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S
SWISS MADE	PHONE +41 61 965 22 22	info@thommen.aero																