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AN509

Min/Max values for the MS5534B

1   Limits for Coefficients and for the Calculated Results of MS5534B

Assumed pressure and temperature range: 0...1100 mbar, -40...85°C.
For definitions, see data sheet of MS5534B.

Maximum Values for C1-C6

	min	typ	max
C1	0	24285	32767
C2	0	1384	4095
C3	0	745	1023
C4	0	405	1023
C5	0	932	2047
C6	0	28	63

Note: For the type of sensor used in MS5534B (MS7801A), the following limits of coefficients can be expected but are not 100% tested:

	min	typ	max
C1	17250	24285	30950
C2	600	1384	3350
C3	500	745	810
C4	200	405	1023
C5	0	932	1650
C6	10	28	63

Maximum Values for D1, D2

	min	typ	max
D1	0	17000	40000
D2	0	22500	45000

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Maximum Values for Calculation Results

Pmin = 0mbar   Pmax = 1100mbar,
Tmin = -40°C   Tmax = +85°C   Tref = +20°C

	min	typ	max
UT1=8*C5+20224	20224	27680	36600
dUT=D2-UT1	-11400	0	12350

dUTmin = (Tmin-Tref)*190TLSB/°C
dUTmax = (Tmax-Tref)*190TLSB/°C

	min	typ	max
OFF=(C2+(C4-512)*dUT/2^14)*4	-1544	5536	17921

OFFmin =(C2min+(C4min-512)*dUTmax/2^14)*4
OFFmax=(C2max+(C4max-512)*dUTmax/2^14)*4

	min	typ	max
SENS=C1+C3*dUT/2^10+24576	13187	48861	65295

Sensmin =C1min+C3max*dUTmin/2^10+24576
Sensmax=C1max+C3max*dUTmax/2^10+24576
Upper limits of 30950 for C1 and 850 for C3 are used.

	min		max
P (0...1100 mbar with 0.1 mbar resolution)	0		11000
X=(P*10 –2500)/10*2^5	-8000		27200

	min		max
TEMP (-40…85°C with 0.1°C resolution)	-400		850

Low Temperatures:

	min		max
T2=11*(C6+24)*(200-TEMP)^2 /2^20	0		328
P2= 3*T2*(P-3500)/2^14	-210		451

High Temperatures:

	min		max
T2=3*(C6+24)*(450-TEMP)^2 /2^20	0		180
P2= T2*(P-10000)/2^13	-115		249

REVISION HISTORY

Date	Revision	Type of changes
November 18, 2004	V1.0	Initial release
December 20, 2004	V2.0	Adaptation for MS5534B

FACTORY CONTACTS

Intersema Sensoric SA   Tel. (032) 847 9550
Ch. Chapons-des-Prés 11   Tel. Int. +41 32 847 9550
CH-2022 BEVAIX   Telefax +41 32 847 9569
    e-mail: sales@intersema.ch
SWITZERLAND   http://www.intersema.ch