ARCS SKYRAD and GNDRAD Data Logger Field Calibration Form

CALF(DAQR1)-0001

I. Calibration information

This is a (check which):	Calibration	Calibration Check	Field Calibration
			X

Date:	GMT Begin Time:	GMT End Time:		ARCS #
10/19/2001	5:12	2:24:00 AM	20-Oct	1

Instrument / System:	TWP OMS Part Number(s):	TWP OMS Serial Number(s):
SKYRAD1 ZENO Datalogger	ZENO-3200(RAD)	037 (WD25940)
GNDRAD1 ZENO Datalogger	ZENO-3200(RAD)	

Current Configuration Version:	New Configuration Version
V000407.00	

Location (eg. PNNL, Manus):	Participant(s):	Issued by:	Signature(s):
Manus	Bill Porch		
	John Glowacki		

Reference Instrument(s):	TWP OMS Part Number(s):	TWP OMS Serial Number(s):
Voltage source (Val)	2701C	26-1348
Voltmeter Fluke (Flk)	8842A	626.5258

Precision Resistors 4018, 8240, and 17790 Ohms

Verify that serial numbers of reference instruments are correct (yes / no)	**Yes**
Verify calibration coefficients and configuration file changed accordingly for PIRs, PSPs, and NIPs. (yes / no)	**Yes**
Correct system time and date (yes / no)	**NO**

NOTES: Time and date reset.

SEE Problem box

Troy checked the power supply, 12.06Vdc 5mV ripple, so I don't think power supply could have caused the problem.

II. Initial Values

Sensor / Element Connection Location	Reference Target (Val) Actual (Flk)	Reading Actual or Range	Reference Target (Val) Actual (Flk)	Reading Actual or Range	Reference Target (Val) Actual (Flk)	Reading Actual or Range
PIRG Signal	0.0μV	(μV)	500.0μV		1000.0μV	
Connector 2	Short	5	500	505	1000	1005
PIRG Rc	4000 Ω		8000 Ω		16000 Ω	
Pins 2 - 3	4021	4017	8249	8235	16200	16205
PIRG Rd	4000 Ω		8000 Ω		16000 Ω	
Pins 7-8	4024	4017	8245	8230	16202	16195
PIRD Signal	0.0μV		500.0μV		1000.0μV	
Connector 6	Short	3.	500	506	1000	1007
PIRD Rc	4000 Ω		8000 Ω		16000 Ω	
Pins 2-3	4021	4028 to 4035	8249	8241	16200	16218
PIRD Rd	4000 Ω		8000 Ω		16000 Ω	
Pins 7-8	4024	4022. To 4014	8245	8230	16202	16195
PSPG	0.0μV		6000.0μV		12000.0μV	
Connector 1	Short	3.	6000	6007	12000	12005
PSPD	0.0μV		6000.0μV		12000.0μV	
Connector 5	Short	2.	6000	6005	12000	12007
NIP	0.0μV		6000.0μV		12000.0μV	
Connector 7	Short	4.	6000	6003	12000	11997
IRT	0.0mV		500.0mV		1000.0mV	
Connector 3	Short	0.	500	496	1000	996
UVB_UV pins 2&3	0.0mV		1250.0mV		4000.0mV	
Connector 4	Short	0.	1250	1246	4000	3996
UVB_T pis 2&6	0.0mV		1000.0mV		2000.0mV	
Connector 4	Short	0.	1000	996	2000	1996
GNDRAD						
PIR Dn Signal	0.0μV		500.0μV		1000.0μV	
Connector 6	Short		500		1000	
PIR Dn Rc	4000 Ω		8000 Ω		16000 Ω	
	4017		8245		17785	
PIR Dn Rd	4000 Ω		8000 Ω		16000 Ω	
	4024		8257		17789	
PSP Dn	0.0μV		6000.0μV		12000.0μV	
Connector 5	Short		6000		12000	
NET (+ values)	10.0mV		50.0mV		100.0mV	
Connector 9	10		50		100	
NET (- values)	- 10.0mV		- 50.0mV		- 100.0mV	
Connector 9 pins 3&2	-10		-50		-100	
IRT	0.0mV		500.0mV		1000.0mV	
Connector 3	Short		500		1000	
Voltage Divider						

Were there calibration changes?(yes/no) **No**

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II. Final Values

Sensor / Element Serial Number:	Reference Target (Val) Actual (Flk)	Reading Actual	Reference Target (Val) Actual (Flk)	Reading Actual	Reference Target (Val) Actual (Flk)	Reading Actual
PIRG Signal	0.0μV		500.0μV		1000.0μV	
Connector 2						
PIRG Rc	4000 Ω		8000 Ω		16000 Ω	
Pins 2 - 3						
PIRG Rd	4000 Ω		8000 Ω		16000 Ω	
Pins 7-8						
PIRD Signal	0.0μV		500.0μV		1000.0μV	
Connector 6						
PIRD Rc	4000 Ω		8000 Ω		16000 Ω	
Pins 2-3						
PIRD Rd	4000 Ω		8000 Ω		16000 Ω	
Pins 7-8						
PSPG	0.0μV		6000.0μV		12000.0μV	
Connector 1						
PSPD	0.0μV		6000.0μV		12000.0μV	
Connector 5						
NIP	0.0μV		6000.0μV		12000.0μV	
Connector 7						
IRT	0.0 mV		500.0 mV		1000.0 mV	
Connector 3						
UVB_UV	0.0 mV		1250.0 mV		4000.0 mV	
Connector 4						
UVB_T	0.0 mV		1000.0 mV		2000.0 mV	
Connector 4						
PIR Dn Signal	0.0μV		500.0μV		1000.0μV	
PIR Dn Rc	4000 Ω		8000 Ω		16000 Ω	
PIR Dn Rd	4000 Ω		8000 Ω		16000 Ω	
PSP Dn	0.0μV		6000.0μV		12000.0μV	
NET (+ values)	9.5 mV		45.0 mV		95.0 mV	
NET (- values)	- 9.5 mV		- 45.0 mV		- 95.0 mV	
IRT	0.0 mV		500.0 mV		1000.0 mV	
Voltage Divider						

IV. Statistics(if applicable)

No. of Samples:	Std. Dev.	CF Range %	Uncertanty %

V. Calilbration Change(if applicable)

Sensor or Parameter	Sensor Serial No.	Internal Resistance (Ohms)	Original Sensitivity (Volts/Unit)	Offset	Quadratic
	Old / New	Old / New	Old / New	Old / New	Old / New

Document(s) Referenced:	Document(s) Updated:
PRO(DAQR)-001.001	PRO(DAQR)-001.007

PROBLEMS: Part way through calibration, the data logger reset with erorr messages 11 and 12 watchdog timer overflow and memory stack overflow.

Left spare rad logger plugged in overnight, and disconnected from the laptop. When re-intialized the next day the boot sequence could only find two chips out of the seven and then began looping again