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TECHNICAL BULLETIN

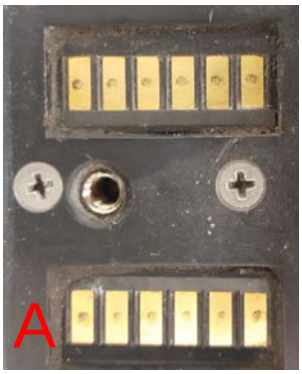
TB-1702B

PDM3700 Contact Cleaning Instructions and Short Run Time Troubleshooting

Introduction

The back of the PDM 3700 has contact points and pins that come into proximity with one another during charging/downloading. These contact points should be cleaned after each use to remove residual dust from monitoring. This dust can cause incomplete charging of the unit and as well as overheating of the pins during charging, leading to damage to the contacts. The suggested cleaning procedure is to use a cotton swab saturated with isopropyl alcohol to aggressively wipe down the contacts until no residue remains, while the pins can simply be wiped down with a damp cloth. The charging cable base can be cleaned using the cotton swabs and isopropyl alcohol.

Visual examples of the cleaning procedure are provided below. Picture A shows dust build up where the pins make contact. Picture B illustrates use of swab to clean the heavy residue. Picture C shows the clean contacts and a total of 5 swabs used to remove the material. Picture D shows residue on the mating surface of a charging cable which should also be cleaned to avoid dust build up. The areas should be allowed to dry for 3-5 minutes before reconnecting.



USA
27 Forge Parkway
Franklin, MA 02038
Phone: (508) 520-0430
Toll Free: (866) 282-0430
orders.aqi@thermofisher.com

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Short Run Time Troubleshooting

Initial troubleshooting for PDM3700 shortened run time issues:

1. Verify contacts are being regularly cleaned, with no coal dust build up (see Tech Note)
2. Verify cable to instrument has no obvious physical damage
3. Verify charger is operating properly (solid green prior to monitoring)
4. Verify pins in charging cables are not stuck
5. Verify the charger cable is tight and flush to the PDM (no gaps)
6. Open the csv file of the failed run
    a. Verify temperature settings were correct for environment start and stop temperature
    b. Look at ambient temperatures during monitoring to see if much colder than settings
    c. Check starting battery voltage – should be 1.88 – 1.98V with full charge
    d. Look at battery voltage decline – should be a steady drop
    e. Check differential pressure to see if high filter loading

Secondary attempt

7. Run diagnostics prior to unit going to warm up
    a. Verify battery voltage is between 1.90 – 2.00V with pump running and charger off
8. Swap cables from failed PDM/charger set up (“A”) to a “known good” PDM/charger set up (“B”) and vice-versa to see if problem follows the suspect cable or fixes PDM/charger set up (“A”).
    a. If PDM (“A”) works properly with a different cable and set up (“B”) is not running a full shift, this indicates the cable, or the connection, may be at fault.
    b. If possible, repeat above with another “known good” PDM/charger set up (“C”) and if problem continues to follow the “suspect” cable, send a replacement cable.
    c. If both “A” and “B” are both working properly, it may be an intermittent issue or dirt on connectors.
    d. If switching does not resolve the run time issue, return PDM, cable, and charger for evaluation.

14	Time	FIRMWAR	SERIAL NU	Program T	USER ID	AIR HEAT	TE HEATEF	FLOW RAT	MASS K0	MASS F0	HOURS US	MRE EQUI	Shift Limit	PC PROGRAM
15	10/29/2015 7:20	7.7	3.7E+10	34200		43.07065	46	2.2	14459	297.3662	312	1	2	1
16	##########	7.7	3.7E+10	34200		43.03808	46	2.2	14459	297.3662	322	1	2	1
17														

27	Time	STATUS CC	AIR HEATE	TE HEATEF	TE HEATEF	AMBIENT	DIFFEREN	FLOW RAT	AMBIENT	BATTERY V	MASS FRE	MASS1 TO	30 Min Co	Cum1 Con	Shift Conc	MASS2 TO	15 Min Co	Cum2 Con	TILT Z DUT	AMBIENT	RH PERCENT
28	10/29/2015 7:20		45.73307	50.64129	46.04244	694.4142	-32.3958	2.203169	23.09265	1.828613	297.3662	0	0	0	0	0	0	0	78.29616	50.00793	
29	10/29/2015 7:21		45.73307	49.58038	46.04244	694.3256	-32.3958	2.203169	23.09265	1.953125	297.3646	0	0.117324	0.136968	0	0	0.219118	0.254038	77.33176	51.47797	
30	10/29/2015 7:22		45.73307	48.4036	46.04244	696.2818	-32.2346	2.203169	23.26873	1.953125	297.3615	0	0.434563	0.486927	0	0	0.704765	0.764364	78.39885	53.3241	
31	10/29/2015 7:23		44.5865	47.28661	46.04244	708.3213	-32.8928	2.203169	23.4846	1.953125	297.3556	0	1.054786	1.199816	0	0.010445	1.495939	1.619364	78.38433	54.42269	
32	10/29/2015 7:24		44.5865	46.22866	46.04244	720.2676	-32.8151	2.203169	23.74935	1.818848	297.3494	0.016337	1.784991	1.886209	0.013016	0.010445	2.225632	2.224739	78.37421	55.83978	
33	10/29/2015 7:25		44.5865	46.22866	46.04244	732.6501	-32.95	2.203169	24.05035	1.953125	297.3433	0.016337	2.369763	2.319399	0.013016	0.027387	2.69241	2.526861	78.34708	55.83978	
34	10/29/2015 7:26		44.5865	46.22866	46.04244	738.2721	-32.7158	2.203169	24.30844	1.953125	297.3403	0.031365	2.69293	2.401183	0.024995	0.027387	2.875132	2.47434	77.5349	55.83978	
35	10/29/2015 7:27		44.5865	43.58588	46.04244	738.6295	-32.8557	2.203169	24.30844	1.953125	297.3411	0.031365	2.69293	2.122774	0.024995	0.027387	2.738441	2.120288	72.51932	50.41497	
36	10/29/2015 7:28		43.32231	43.58588	46.04244	738.5378	-32.5989	2.203169	24.18409	1.953125	297.3394	0.031365	2.512295	1.927149	0.024995	0.027387	2.500108	1.933843	79.78858	50.41497	
37	10/29/2015 7:29		43.32231	41.55662	46.04244	738.9764	-32.4565	2.203169	24.18409	1.953125	297.3393	0.031365	2.27818	1.737521	0.024995	0.027387	2.234091	1.734837	78.62358	50.41497	
38	10/29/2015 7:30		42.31902	41.55662	46.04244	739.1428	-32.4565	2.203169	24.18409	1.953125	297.3406	0.031365	2.055357	1.566214	0.024995	0.027387	1.99583	1.526046	79.32733	50.41497	
39	10/29/2015 7:31		42.31902	41.55662	46.04244	739.0969	-32.4565	2.203169	24.31687	1.816406	297.338	0.031365	1.851474	1.48451	0.024995	0.027387	1.788285	1.483542	78.49837	50.41497	
40	10/29/2015 7:32		42.31902	39.23949	46.04244	739.3565	-32.6208	2.203169	24.64954	1.948242	297.3371	0.031365	1.683214	1.40584	0.024995	0.027387	1.619941	1.403609	78.32274	50.41497	
41	10/29/2015 7:33		40.82222	39.23949	46.04244	739.3243	-32.8121	2.203169	24.8874	1.818848	297.3368	0.031365	1.538673	1.302332	0.024995	0.027387	1.475513	1.304043	78.82518	48.7727	

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