TOTALFLOW
Technical Bulletin 119

Local/Remote PCCU Protocol Switch Issue Related to the CB180, CB181 and 6400 Flow Computers

Totalflow Technical Bulletin

Version 1.0, Revision AA (29 October 2004)

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1. **Purpose**
   To describe a potential data logging problem with 6400 and 6700 Flow Computer units. **This bulletin does not pertain to the Xseries and microFLO products!**

2. **Description**
   A problem has been reported that pertains to a small number of 6400 and 6700 Flow Computers. Potentially the Flow Computer could stop logging historical data after the user has performed a local DB2 or trend collection. The problem is extremely rare and tests have shown that many transitions from local connection (normal PCCU functions including entry, monitor, calibration) to DB2 or trend collections are required to stop historical logging.

   This problem does not exist if performing DB1 (old database) collections.

3. **Symptom**
   Flow computer stops logging historical data after a local DB2 historical or trend data collection. When this occurs the local Flow Computer display stops scrolling. A gap is created in the historical data from the time the lockup occurs to whenever the meter stops logging again. Either a local connection using the PCCU cable or warm starting the Flow Computer resets the unit and it should begin logging again. See DB2 example below:

Daily Flow Data | Log Period Data | Events | Characteristics | Daily Flow Detail | Log Period Detail

Date	DP (In H2O)	SP (PSIA)	Tf (Deg F)	Volume (MCF)	Energy (MMBTU)	Integral	FlowTime	Alarms	I. Mult.
8/29/2004	36.135	53.257	74.701	11.126	11.718	7.843	17.755	AH DH DL ZF *	1418.493
8/30/2004	31.604	41.086	82.457	54.311	57.204	37.926	100.000	LC	1432.013
8/31/2004	23.421	42.851	84.989	47.884	50.435	33.323	100.000	LC	1436.953
9/01/2004	16.514	57.131	81.681	46.435	48.909	32.178	100.000	DL LC	1443.089
9/02/2004	20.105	47.654	83.193	46.429	48.902	32.256	100.000	DL LC	1439.403
9/03/2004	23.874	38.785	85.294	46.006	48.457	32.048	100.000	LC	1435.528
9/04/2004	22.660	40.127	85.346	45.619	48.050	31.756	100.000	LC	1436.553
9/05/2004	19.005	46.787	85.387	44.113	46.462	30.652	100.000	DL LC	1439.150
9/06/2004	11.432	71.555	75.583	42.765	45.043	29.549	100.000	AH DL LC	1447.252
9/07/2004	18.610	43.674	73.230	42.953	45.241	29.844	100.000	DL LC	1439.255
9/08/2004	18.533	46.851	72.361	43.522	45.841	30.227	97.498	DH DL ZF DE *	1439.858
9/09/2004	17.915	46.235	76.107	43.658	45.983	30.307	100.000	DL LC	1440.488
9/10/2004	17.365	47.087	77.894	43.386	45.697	30.109	100.000	DL LC	1440.942
9/11/2004	15.536	51.133	81.129	42.806	45.087	29.673	100.000	DL LC	1442.609
9/12/2004	15.460	50.345	82.800	42.343	44.598	29.354	100.000	DL LC	1442.480
9/13/2004	17.950	42.928	84.923	42.042	44.281	29.202	100.000	DL LC	1439.666
9/14/2004	19.061	40.400	83.634	41.962	44.197	29.173	100.000	DL LC	1438.393
9/15/2004	42.693	39.885	77.799	10.863	11.441	7.666	17.439	DH DL ZF DE *	1416.961
9/16/2004	25.468	39.903	84.043	48.178	50.744	33.581	100.000	LC	1434.656
9/17/2004	20.385	40.171	93.086	9.080	9.564	6.316	100.000		1437.711
9/27/2004	104.661	42.812	94.037	16.309	17.177	11.665	100.000	DH DE	1398.065

   In the above daily s a gap between 9/17 and 9/27 where the Flow Computer stopped logging historical data.

Comparing the events file below along with the hourly data logged on the 17th shows a correlation between the DB2 collection on 9/17 @ 14:01 and the last data logged at 14:02 on the same day.

Daily Flow Data | Log Period Data | Events | Characteristics | Daily Flow Detail | Log Period Detail

Date/Time	Event Description	Old Value	New Value	Seq
8/16/2004 14:49:11	Local database collection		-3.0000	64
9/01/2004 14:37:06	Local database collection		-3.0000	65
9/17/2004 14:00:32	Local database collection		-3.0000	66
9/17/2004 14:01:09	Local database collection		-3.0000	67
9/27/2004 13:04:39	Local database collection		-3.0000	68
9/27/2004 13:08:26	Local database collection		-3.0000	69
9/27/2004 13:21:56	Local database collection		-3.0000	70
9/27/2004 17:53:25	Local database collection		-3.0000	71

Daily Flow Data | Log Period Data | Events | Characteristics | Daily Flow Detail | Log Period Detail

Time	DP (In H2O)	SP (In H2O)	T (Deg F)	Volume (MCF)	Energy (MMBTU)	Integral	FlowTime	Alarms	Seq
09:00 to 10:00	17.745	39.377	78.675	1.669	1.758	1.160	100.00		2186
10:00 to 11:00	24.609	39.854	85.775	1.972	2.078	1.374	100.00		2187
11:00 to 12:00	17.870	39.989	96.913	1.688	1.778	1.173	100.00		2188
12:00 to 13:00	23.717	40.695	101.805	1.958	2.063	1.364	100.00		2189
13:00 to 14:00	18.513	40.934	103.272	1.738	1.831	1.208	100.00		2190
14:00 to 14:02	20.886	40.663	101.410	0.054	0.057	0.038	100.00		2191

This problem only occurs on a small number of Flow Computers and can be identified by verifying the Flow Computer continues to scroll data on the display after a DB2 or trend collection.

4. Workaround

If data logging stops, connecting to the local PCCU connector or warm starting the unit will force the Flow Computer to begin logging historical data again.

5. Conclusion

This database logging issue will only occur in a very small number of devices. We do not think this problem is wide spread due to the number of local connections and DB2 collections required to reproduce this problem by ABB. Customers can identify Flow Computers with this issue by running a missing data report and looking for missing daily records and then comparing the last log record stored with the local collection date/time. If the symptom is confirmed then this particular meter has the "PCCU Local/Remote Protocol Switch Data Lock-Up" problem and you will either need to perform one of the workarounds mentioned above or replace the EPROM.

<u>The following EPROMs corrected this logging:</u>
6400 (2015333-00x) EPROM = 2015494-017 or later, Two digit revision code "ET" or later
6600 CB-180 (2012803-00x) EPROM = 2015376-012 or later, Two digit revision

code “SU” or later
6700 w/o Expanded I/O (2015382-00x) EPROM = 2015489-019 or later, Two digit revision code “DR” or later
6700 w/Expanded I/O(2015382-00x) EPROM = 2015490-017 or later, Two digit revision code “VR” or later

Note: The two digit revision code is displayed when polling units using WinCCU and DB1 database. Other less frequently used EPROMs have also been updated to include this correction. Call Customer Service if your particular EPROM does not show up in the list above.

To assist our technical staff please refer to this particular problem using this internally recognized phrase:

” PCCU Local/Remote Protocol Switch Data Lock-Up”

ABB will update any EPROMs that exhibit the symptoms described above at no charge. Please call our technical service staff at (800) 442-3097 option 1,2 for upgrade information.