TeleCorrector Standard ACCOL Load

Bristol Babcock
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For technical questions regarding the TeleCorrector ACCOL load, other **ACCOL products, Open BSI Utilities**, as well as Bristol's **Enterprise Server®/ Enterprise Workstation®** products, **call (860) 945-2286.**

For technical questions about the TeleCorrector unit, and other **Network 3000 hardware call (860) 945-2502.**

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The Application Support Group also maintains a bulletin board for downloading software updates to customers. To access the bulletin board, dial (860) 945-2251 (Modem settings: 14.4K baud maximum, No parity, 8 data bits, 1 Stop bit.)

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Who Should Read This Document?

This document is intended to be read by EGM 3530-50B TeleCorrector users who are using the standard TeleCorrector ACCOL load.

It assumes that the TeleCorrector has been installed, and that all network cabling has been connected and tested.

EQUIPMENT APPLICATION WARNING

The user should note that a failure of this instrument or system, for whatever reason, may leave an operating process without protection. Depending upon the application, this could result in possible damage to property or injury to persons. It is suggested that the purchaser review the need for additional backup equipment or provide alternate means of protection such as alarm devices, output limiting, fail-safe valves, relief valves, emergency shutoffs, emergency switches, etc. If additional information is required, the purchaser is advised to contact Bristol Babcock.

This document assumes familiarity with the following subjects:

- The requirements of their particular process or application.

- ACCOL programming. Anyone modifying the TeleCorrector standard ACCOL load (TC1RUN) should be an *experienced* ACCOL programmer. For more information, consider attending an ACCOL training class. Also see *An Introduction to ACCOL* (document# D4056), the *ACCOL Workbench User Manual* (document# D4051), and the *ACCOL II Reference Manual* (document# D4044).

- Universal Operator Interface (UOI) software. Anyone attempting to use the standard TeleCorrector menus must be familiar with the UOI software tools. See the *UOI Configuration Manual* (document# D5074) and the *UOI Operator Manual* (document# D5075) for details. Details on the TeleCorrector menus are included in Appendix F of the TeleCorrector manual (CI-3530-50B).

Table of Contents

Chapter 1 - Introduction

What is the TeleCorrector Standard ACCOL Load?

The TeleCorrector Standard ACCOL Load is an ACCOL load intended for use in the EGM 3530-50B TeleFlow Corrector (TeleCorr). It computes uncorrected and corrected gas flow rates, energy rate and volume and energy totals for a single Turbine meter run.

TeleCorrector Menus

TeleCorrector menus specific to the TeleCorrector Standard ACCOL Load are available for use with the UOI or TMS program. These menus allow operator access to data in the TeleCorrector, and also allow configuration and setup of the unit.

Information on using the TeleCorrector menus is included in *Appendix F of the TeleCorrector Manual (CI-3530-50B).*

Downloading the TeleCorrector Standard ACCOL Load

The TeleCorrector is shipped from the factory with the TeleCorrector Standard ACCOL Load already installed. If, for any reason, you need to re-install it, it may be re-downloaded from the diskette using the "**Download ACL to ACCOL node**" option within the UOI System Setup Menu, or it can be downloaded using the Open BSI Downloader.

Chapter 2 - TeleCorrector Standard ACCOL Load

Overview

The TeleCorrector Standard load (TC1RUN) is an ACCOL load intended for use in the EGM 3530-50B Teleflow Corrector (TeleCorrector). It computes uncorrected and corrected gas flow rates, energy rate and volume and energy totals for a single Turbine meter run. Flow calculations and data storage are done according to the requirements of Chapter 21 of the *American Petroleum Institute Manual of Petroleum Measurement Standards* (MPMS).

The load provides:

- Corrected volume calculations per AGA7 (1985) for a Turbine meter.
- Supercompressibility (Fpv) per AGA8Detail or AGA8Gross or NX-19.
- Energy (Btu/ft^3) per AGA5 or from a fixed value.
- Raise/Lower flow rate control using a PID3TERM module and two Discrete outputs.
- Pulse output on DO#1 with rate proportional to corrected volume.
- Pulse output on DO#2 with rate proportional to uncorrected volume.
- An Audit Trail holding 200 events and 200 alarms for a total of 400 entries.
- A Daily Archive file containing 35 days of Daily historical information.
- A Periodic Archive file containing 35 days of Hourly historical information.
- A Trend Archive file containing 8 days of 15 minute trend information (can be disabled).
- Support of a local 2 line display (LCD) and single push-button.
- Local and Network communications.
- Nomination control and alarm settings.
- Input sampling and averaging every second.
- Configurable 1, 2, 5, 15, and 60 second calculation interval.

- Pulse counting and frequency computation.
- Configurable automatic dial-out on alarm occurrence. (NOT YET SUPPORTED)
- Control of an external radio.
- Battery charge regulator.

NOTE:
The EGM 3530 only supports a subset of the ACCOL module library thus some ACCOL modules will not operate. See the '*Hardware and Software Requirements*' section of the *ACCOL II Reference Manual* (document# D4044) to find out which modules are supported.
In addition, the EGM-3530 will not provide some functions that are common in Bristol products; among these are Communication Statistics, Crash Blocks, On-line Diagnostics, Task slip information, and Task rate information.

Every second, the load collects 'live' Static Pressure (P) from the internal sensor conditioning circuitry and Temperature (T) from RTD conversion circuitry. The P and T values are averaged over a Calculation interval which can be configured as 1, 2, 5, 15 or 60 seconds; a long interval reduces power consumption.

Each Calculation interval the average P and T values and pulse count total for the interval are used to compute both an uncorrected and corrected volume. These values are added to Hourly, Daily, and running totals. The pulse count, interval time, and volume correction factor are used to calculate an uncorrected flow rate in acf/h and a corrected flow rate in mscf/h.

In addition to the input signal averages for the Calculation interval, another set of input averages is maintained for each full log period (hour and day); these averages are stored in the Archive for that log.

Note: the ACCOL load flow rate and volumes engineering units (acf, mscf) CANNOT be changed using TMS; the ACCOL load must be revised.

Note: the TC1RUN load source (.ACC file) can be modified by customers to fit their particular needs. When the load is changed the TELECORRECTOR menus should also be changed and renamed so that menus matching the customized load can be selected for TMS or UOI to use.

Chapter 2 - TeleCorrector Standard ACCOL Load

Process Inputs: Pulse Count, Static Pressure (P), Temperature (T)

The process inputs used for the Gas Flow computations are Static Pressure (P), Temperature (T) and Pulses. The pressure P comes from the internal Static pressure sensor and Temperature from an RTD probe. Each second, these values are acquired and placed in the 'live data' signals. Pulse count is the number of pulses counted during the Calculation interval.

Input Averaging

The P and T 'live data' values are averaged over the configured Calculation interval. At the end of each Calculation interval the calculated averages are stored in the 'in-use' signals and used to calculate flow rate and volume.

Separate averages of P, and T are maintained for each hour and day.

Input Override and Calibration Mode

The 'in use' signals can be 'frozen' at their current value by setting their standard ACCOL Control Inhibit (CI) on. When an 'in-use' signal (C, P, or T) is in 'CI' mode, the 'live data' signal continues to reflect the current value from the internal sensor, however, the 'in-use' signal is no longer updated and remains 'frozen' at its current value. Input averaging continues to be performed using the 'in-use' value rather than the 'live data' value.

While the 'in-use' signals are in CI mode an 'Override' value can be entered into the signal e.g., a test value to verify the calculations.

When the CALIB (Calibration mode) signal is set ON the P and T 'in-use' signals are simultaneously placed in CI mode.

Input Alarms

The process inputs P and T are alarm signals with the following default alarm limits:

	Low	High	LowLow	HighHigh	LDb	HDb
P	100	1500	0	2000	10	50
T	50	150	32	250	3	10

Digital Inputs

Inputs 1 and 2 are free for general use; input 2 is an alarm input. The default alarm condition is the ON state, i.e. the alarm occurs when the input enters its ON state.

Digital Outputs

Discrete outputs are shared by the Flow control and Sampler functions.

When Flow control is enabled:
DO 1 - Raise pulse output.
DO 2 - Lower pulse output.

When Sampler 1 output is enabled:
DO 1 - Pulse output based on corrected volume (to drive an external totalizer or sampler).

When Sampler 2 output is enabled:
DO 2 - Pulse output based on uncorrected volume (to drive an external totalizer or sampler).

Sampler 1 logic has a default volume of 100 mscf and a default pulse width of 0.5 second. Sampler 2 has a default volume of 1000 acf and a pulse width of 0.5 sec.

Flow control has priority for the discrete outputs so that if both Sampler output and Flow control are enabled, Sampler will be shut off and Flow control will use the outputs.

Auxiliary Analog Input

This input is scaled for 1 to 5 volts, but up to 16 volts can be applied; it can be used as an alarm or monitoring input. Signals are provided to allow this input to be scaled into other units. Voltages higher than 5 volts are scaled accordingly, i.e. 10 volts=200%, 15 volts=300%, etc.

The default scaling is:

Zero = 0.0 % (1 volt input)
Full scale = 100.0 % (5 volts input)

Default alarm limits are:

Low	10%
High	100%
Lo-lo	0%
Hi-hi	150%
LDb	3%
HDb	10%

Pulse Input

In the 3530-50B the integral pulser assembly generates pulses as the Turbine meter rotates. These are counted by a HSCOUNT module that computes a running pulse total and frequency value. Gas calculations use the number of pulses that have been counted since the last calculation interval. Pulse counts are divided by a turbine meter K factor (in pulses per cubic foot, set by the user) before being used in calculations.

Every calculation interval (1, 2, 5, 15, or 60 seconds) the number of pulses occurring during the interval is calculated and corrected. The volume passed during the interval is divided by the interval time and scaled into rates of acf/hour and mscf/hour. In some installations, the pulse rate can drop quite low, but every pulse group is always counted and corrected, so there is no 'cutoff' in the sense that conversion of pulses to corrected volume stops. What will be affected is the accumulated flow time registered in the Archive files.

When the pulse rate exceeds the calculation interval (where 1 minute is the longest calculation interval) Archive averages and flow time accumulate normally. When the time between pulses increases to the point that no pulses occur during a calculation interval, the flow time for that interval is discarded and a flow-flag is cleared. If a calculation interval begins with the flow-flag clear and is partially complete when a pulse occurs (e.g. 20 seconds into a 60 second cycle), the flow flag is set and the remaining 40 seconds of interval will be added to the flow time. The Archive will thus only contain valid flow time.

The flow flag affects the averaging done by the Archive. If an Archive interval (e.g. 1 hour) begins with the flow-flag clear (no pulses), the Temperature and Pressure values are straight averaged over the time of the Archive interval. If no pulse occurs during the interval the Archive will show zero flow time and valid straight averages. If the flow flag is set after the Archive interval has started, the Archive clears its straight averages and begins averaging again. Thus, Archives contain straight averages and zero flow time if no pulses occurred during the Archive interval, but if any pulse occurs, the averages are 'flow time' only.

The signal LFLOW.LIMIT.CFG is intended to provide a way for users to cause an alarm report when the pulse rate drops too low. The signal contains a value in units of seconds; when the time between pulses exceeds the value, a LFCUTALM.. alarm signal is set to report the condition. If the LWFLOW.CUTOFF.CFG setting is larger than the established calculation interval, no alarm will be reported but the Archive will show the smaller flow times caused by the low rate.

Communications Port Assignments

PORT #1 - Pseudo-slave local port, 19200 bps.
PORT #2 - BSAP network port, 9600 bps.

The baud rate and the RTS/CTS delay may be changed on-line.

Communication Port Usage

The Local port is used for local configuration and data collection. It usually connects to a PC or Laptop that is running a user-interface software package like TMS or UOI. The Local port will respond to any address; therefore it CANNOT be used in a multi-drop connection. Only the Network port can be multi-dropped (with the necessary external RS-485 converters).

The Network port is used generally for data collection via Bristol Peer-to-peer messages coming from another Bristol device such as a Data Concentrator; for this kind of data collection a number of defined lists are provided as well as Slave modules for each list. This port can also be used for data collection or configuration by software such as Open BSI, UOI, TMS, or other third party BSAP protocol based communication systems. The Network port will not respond to messages unless its DCD input is high.

Gas Flow Calculations

The 1985 AGA7 calculation is used; AGA7 calculations are performed at the end of the configured Calculation interval. Pulses counted during the Calculation interval are divided by the Meter K factor (in pulses per cubic foot) to obtain an uncorrected volume in cubic feet. This volume is multiplied by an AGA7 volume correction factor to obtain corrected volume for the interval. Both the corrected and uncorrected volumes are added to Hourly, Daily, and other accumulation totals.

The pulse frequency is divided by the K factor to obtain an uncorrected flow rate that is multiplied by the AGA7 volume correction factor to obtain a corrected flow rate.

Super-compressibility (F_{pv})

The AGA7 calculation requires a supercompressibility factor, Fpv; this value can be calculated by AGA8 methods or by NX-19 methods. When AGA8 methods are used either the AGA8Detail or AGA8Gross calculation can be selected. The AGA8Gross module can be used in either the Gravity, CO2, Nitrogen (G,C,N) mode (similar to NX-19) or Heating Value, Gravity, CO2 (HV, G, C) mode.

Flow Rates

Uncorrected flow rate in acf/h is calculated using the input frequency and meter K factor. Corrected flow rate is calculated by multiplying the uncorrected rate by a computed AGA7 correction factor. When the system has been configured for very low pulse rate e.g., more than 15 seconds between pulses, the flow rate is calculated using the corrected volume for the interval and the time between pulses.

Corrected Flow rate is also presented as a daily rate in mscf/day.

Flow Rate Alarm

The flow rate signal is an alarm signal with default alarm limits (in mscf/hr):

Low	0
High	3000
Lo-lo	0
Hi-hi	5000
LDb	50
HDb	50

Flow Volume Totals

At the end of each Calculation interval the corrected and uncorrected volume for that interval is added to totals for the hour, day, current month and 'running' total volume. At the end of each hour, day, and month the accumulated volume for that period is stored and the total cleared for the next period. The running total is not

cleared; it accumulates to 10 million, rolls over to zero and continues accumulating.

Gas Energy Calculations

Gas flow volume for a Calculation interval is converted to energy in MMBTU (i.e. DekaTherms; a DekaTherm is 1 million Btu) by multiplying by a Heating value in BTU/cu.ft. and dividing by 1 million; the Heating value can come from a fixed value or from an AGA5 calculation.
The energy for the interval is summed to produce an energy total in MMBTU for the each hour and day, and for the current month.

Flow rate is converted to energy rate in MMBTU/hr.

Archive Files

Note: Archive files in ACCOL loads CANNOT be edited using TMS; they can only be changed by revising the ACCOL load.

Periodic Archive (Hourly)

Each hour the information shown below is written into a periodic archive file. If log break is enabled, these values are written when a configuration value changes.

DATE/TIME	
LOCAL SEQUENCE NUMBER	
GLOBAL SEQUENCE NUMBER	
FLOW TIME	MINS
AVERAGE STATIC PRESSURE	PSIG
AVERAGE FLOWING TEMP.	DEGF
UNCORRECTED VOLUME	ACF
CORRECTED VOLUME	MSCF
ACCUMULATED ENERGY	MMBTU
AVERAGE FPV	
AVERAGE AUXILIARY INPUT	%
LOWEST PRESSURE	PSI
HIGHEST PRESSURE	PSI
LOWEST FLOW RATE	MSCF/h
HIGHEST FLOW RATE	MSCF/h

Note: The Periodic log interval in an ACCOL load CANNOT be changed using TMS; it can only be changed by revising the load.

Daily Archive

At the end of every day the information shown below is written into a daily archive file.

DATE/TIME	
LOCAL SEQUENCE NUMBER	
GLOBAL SEQUENCE NUMBER	
FLOW TIME	MINS
AVERAGE STATIC PRESSURE	PSIG
AVERAGE FLOWING TEMP.	DEGF
UNCORRECTED VOLUME	ACF
CORRECTED VOLUME	MSCF
ACCUMULATED ENERGY	MMBTU
AVERAGE FPV	
AVERAGE AUXILIARY INPUT	%
LOWEST PRESSURE	PSI
HIGHEST PRESSURE	PSI
LOWEST FLOW RATE	MSCF/h
HIGHEST FLOW RATE	MSCF/h

Trend Archive

If the Trend log is enabled then every 15 minutes the live (instantaneous) values are written to a trend archive as shown below.

DATE/TIME	
LOCAL SEQUENCE NUMBER	
GLOBAL SEQUENCE NUMBER	
UNCORRECTED FLOW RATE	acf/h
STATIC PRESSURE	PSIG
FLOWING TEMP.	DEGF

Log Break

When the Log Break option is enabled archive log-break will occur when a flow-related constant is changed. Log breaks only occur on 1 minute boundaries.

Flow Control

Raise/lower Flow-rate control is achieved using a PID3TERM Module. The Flow Controller uses a FLOW SETPOINT value and the calculated flow rate as inputs to the PID3TERM module, the output of which generates raise/lower pulses on the discrete outputs (Raise on DO#1, Lower on DO#2).

Default settings are:

Gain	1
Integral	1 repeat/min
Derivative	0 mins
Deadband	0
Valve travel	30 secs
Pulse width	1 sec
Max rate	5000 mscf/hr

Radio Control

Two radio control functions are available; Scheduling and Sensing (also called 'Fast radio'). Radio Scheduling is used to conserve battery power by allowing the radio to be powered up for a short time every day in expectation of receiving a message from a remote 'host' during that time.

If Radio Scheduling is enabled, the system will turn ON the radio at a defined time (an hour of the day) and keep it on for a defined length of time, usually in a period of minutes. A user-configured 'listen' timer is also started so that if no messages are received while the timer is running the radio will turn OFF to save power. The radio can also be activated manually for testing via the local port. Radio power is controlled using a system signal that turns an auxiliary power output ON or OFF.

If Radio Sensing is enabled the system will turn the radio on at a defined time (an hour of the day) and begin a sequence in which the radio is turned ON every so many seconds but for 'listen' time intervals less than 1 second. It continues this sequence until the defined 'stop' hour is reached. If a message is received while the radio is ON the system will keep the radio ON, process the message and respond. After every response the radio remains ON for one more 'listen' time, after which it is shut OFF.

Both radio control functions can be active simultaneously.

Modem Dial-Out (THIS FUNCTION IS NOT YET SUPPORTED)

This feature makes use of the ACCOL Slave Auto-dial function. When DIALOUT is enabled and a trigger condition is satisfied the load will automatically dial a phone number (the modem option must be installed) held in the Dial List. The number of the Dial list is held in system signal #DIAL.001. Up to 13 different trigger conditions can be armed to initiate the call. Program logic examines the state of the signal associated with an 'arm' signal and, should it be in an Alarm state, sets a non-zero value into the Dial Enable signal in the Dial List to start the call. The dial commands sent to the modem (i.e. initialization, phone number) are defined by signals in the Dial list.

The use of the modem dial out function implies that the called device has been set up to 'know' that it should poll for alarms after it answers the call and then hang-up.

Dialing logic will dial the first phone number three times and then dial a second number three times, the combination constituting one 'dial-attempt'. To conserve power the maximum number of attempts per hour is two; this value can be configured up to 9 by the user.

Battery Charge Control

Signals are provided to allow charge regulator setup and control for either a 6 or 12 volt battery. Should the charge regulator detect battery overcharge, an alarm occurs, and a shunt regulator is activated which deactivates the solar panel, thereby preventing an overcharge condition.

Power and Load Status Alarms

The main voltage value will be held in an alarm signal with default limits (in Volts) as follows:

Low	5.75
High	16.0
Lo-lo	5.5
Hi-hi	16.5
LDb	.5
HDb	.5

A number of 'load status' logical alarms are provided as follows:

Low freq (cutoff)	pulse frequency is below cutoff
Backup battery	low RAM backup battery
External battery overcharge	excess voltage into the external battery
AGA8 Calculation error	final value is approximate
Floating-point math error	
System self-check	system problem
Sensor conversion	conversion error
Sensor checksum	compensation has changed

Audit/Event Log

The EAUDIT module (in Task 0) is set up to collect both alarms and events, with event signals defined by the signals in list 23. The module is defined with enough space for 400 alarms and events, and the module operates such that 200 alarms and 200 events are kept separate until the Audit log is collected. This design prevents a toggling alarm or event from filling the entire alarm/event log buffer to the exclusion of all other entries.

Gas Data Lists for Master Node Access

Data lists are provided to support the gathering of gas data from a master node via the Network port using Bristol peer-to-peer messages. The associated slave point number is shown. Lists without slave points can only be read using Open BSI DataView.

LIST 10 Full Configuration

ACCOL load revision (PROGREV)
Unit ID
Meter ID
Meter number
Alarm report format
Alarm report format 1
Alarm LCD Display enable
Flow equation select for Fpv
Base pressure
Base temperature
Meter K factor (pulses/cubic foot)
Meter M factor (meter correction factor)
AGA8 Method

AGA8 Gross mode
Contract hour
Low flow cutoff (interval)
SP Full scale pressure
SP Pressure zero
Temperature full scale
Temperature zero
Rate lo-lo
Rate lo
Rate hi
Rate hi-hi
Rate hi deadband
Rate lo deadband
AFR lo-lo
AFR lo
AFR hi
AFR hi-hi
AFR hi deadband
AFR lo deadband
VOL lo-lo
VOL lo
VOL hi
VOL hi-hi
VOL hi deadband
VOL lo deadband
SP lo-lo
SP lo
SP hi
SP hi-hi
SP hi deadband
SP lo deadband
Temp lo-lo
Temp lo
Temp hi
Temp hi-hi
Temp hi deadband
Temp lo deadband
Batt lo-lo
Batt lo
Batt hi
Batt hi-hi
Batt hi deadband
Batt lo deadband
Barometric pressure

Specific heat ratio
Heating value fixed
Heating value source
Specific gravity
Gravity type
CH4
N2
CO2
C2
C3
H2O
H2S
H2
CO
O2
IC4
NC4
IC5
NC5
C6
C7
C8
C9
C10
HE
AR
Sampler enable
Sampler volume
Sampler pulse width
Flow controller enable
Valve limit
Flow setpoint
Deadband
Gain
Integral
Derivative
Max flow rate
Valve travel time
Flow calculation interval
Periodic log interval
Log Break on change
Trending log enable
Network port baud rate
RTS/CTS mode

RTS delay	
Radio power default	
Radio scheduling enable	
Radio listen time	
Radio comm. timeout	
Radio start hour	
Radio stop hour	
Radio local comm. time	
Radio local timeout	
Radio time per node	
Radio time per group	
Radio minute offset into hour	
Temperature unit select	
Kfactor unit select	
Pressure unit select	
Energy unit select	
ACF volume unit select	
Pressure convert factor	
K convert factor	
Volume convert factor	
Energy convert factor	
Heating value convert factor	
Nomination unit	MSCF/MMBTU
Nomination mode	
Nomination stop mode	Fast/PID
Nomination Daily mode	Off/On
Nomination Alarm dialout	Off/On
Nomination Alarm percent	0 - 100
Next start date	
Next start hour	
Next stop date	
Next stop hour	
Demand enable	
Demand interval	
Demand duration	
Demand start hour	
Demand end hour	
Uncorr sampler enable	
Uncorr sampler volume	
Uncorr sampler duration	

LIST 11 Calculated Data - Slave Point 1

Uncorrected Flow Rate

Corrected flow rate
Static pressure input
Temperature input
Pressure base
Temperature base
Zb factor
Zf factor

LIST 12 Configuration #1 - Slave Point 2

Specific Gravity
Heating Value
Barometric Pressure
Base Pressure
Base Temperature
Low flow Cutoff

LIST 13 Configuration #2 - Slave Point 3

ACCOL load version (PROGREV)	
Meter Number	
Flow Equation for Fpv	1985/1992
Calculation Interval	
Contract Hour	
Logging Interval	
Log Break option	
Dummy logical value	
Heat Value source	
Gravity type	
AGA8 Method	
AGA8 Gross Mode	

LIST 14 Controller - Slave Point 4

Sampler Enable	On/Off
Sampler Volume	0 - 10000 MCF
Sampler Duration	1.0 Secs
Flow Rate PID Control	Off/On
Valve Limiting	Off/On
Setpoint	0 MSCF
Deadband	0
Gain	0-100

Integral	0-60 RPTS/Min 1
Derivative	0-60 Min 0
Valve Travel Time	1-30 SEC 30
Maximum Flow Rate	5000 MSCF 5000
Nomination enable	Off/On
Nomination unit	MSCF/MMBTU
Nomination mode	
Nomination stop mode	Fast/PID
Nomination Daily mode	Off/On
Nomination Alarm dialout	Off/On
Nomination Alarm percent	0 - 100
Next start date	
Next start hour	
Next stop date	
Next stop hour	
Uncorr sampler enable	
Uncorr sampler volume	
Uncorr sampler duration	

LIST 15 AGA8 Gross Config

Specific Gravity
Heating Value
CO2 content
Nitrogen content
AGA8 Gross Mode
Gravity type

LIST 16 AGA8 Detail Gas composition

Methane
Nitrogen
CO2
Ethane
Propane
H2O
H2S
H2
CO
O2
I-Butane
N-Butane
I-Pentane
N-Pentane

Hexane
Heptane
Octane
Nonane
Decane
Helium
Argon

LIST 17

Uncorrected Flow Rate
Corrected flow rate
Static pressure input
Temperature input
Pressure base
Temperature base
Fpv factor

LIST 18 Communication configuration

Network port baud rate
CTS/RTS mode
RTS delay
Radio Aux power default
Radio sched enable
Radio on-time
Radio listen time
Radio start hour
Radio end hour
Local on-time
Local listen time
Node poll time
Group poll time
Offset into hour
Demand enable
Demand interval
Demand duration
Demand start hour
Demand end hour
Dialout on Alarm enable
Dial on Cutoff enable
Dummy logical value
Dial on Transmitter fail enable

Dial on Backup battery low enable
Dial on Fl.Pt error enable
Dial on Selftest error enable
Dial on AFR alarm enable
Dial on SP alarm enable
Dial on TF alarm enable
Dial on Flow rate alarm enable
Dial on Battery alarm enable
Dial on Auxiliary input alarm enable
Dial on Charger alarm enable
Dial on Volume alarm enable
Dial on Nomination alarm enable

LIST 20 Live Data

Uncorrected rate
Static pressure
Temperature
Corrected Flow rate
Config variable change

LIST 21 Rate and Volume - Slave Point 5

Uncorrected Flow rate	
Corrected Flow rate	MSCF/h
Energy rate	MMBTU/h
Daily flow rate	MSCF/d
Flow time today	mins
Dummy analog value	
Corrected Volume today	
Uncorrected volume today	
Energy today	
Flow time yesday	
Dummy analog value	
Corrected Volume yesday	
Uncorrected volume yesday	
Energy yesday	
Corrected Volume this month	
Energy this month	
Corrected Volume totalizer	
Uncorrected volume totalizer	
Energy totalizer	
Corrected Volume last month	
Uncorrected volume last month	

Energy last month

LIST 22 Inputs - Slave Point 6

Frequency input
Pulses input
Static pressure
Temperature
System power volts
Power input 1 volts
Power input 2 volts
Backup battery volts
PC board temperature
Auxiliary input
DO#1
DO#2
DI#1
DI#2

LIST 50 LCD Display list

Meter ID
System power
Flowing pressure
Temperature
Uncorrected flow rate
Corrected flow rate
Flow time today
Uncorrected volume today
Corrected Volume today
Corrected Volume yesday
Uncorrected volume yesterday
Corrected Volume totalizer

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COMMENT/COMPLAINT:

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