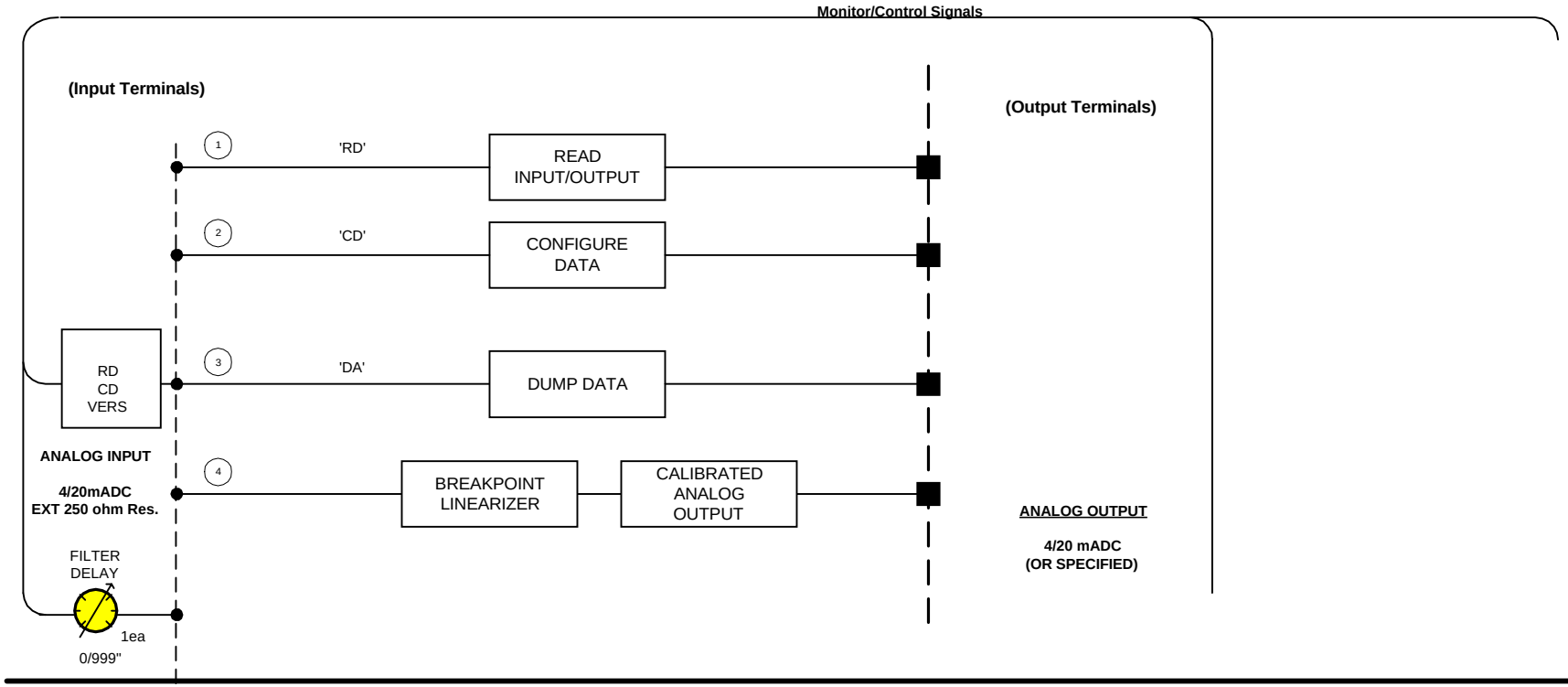
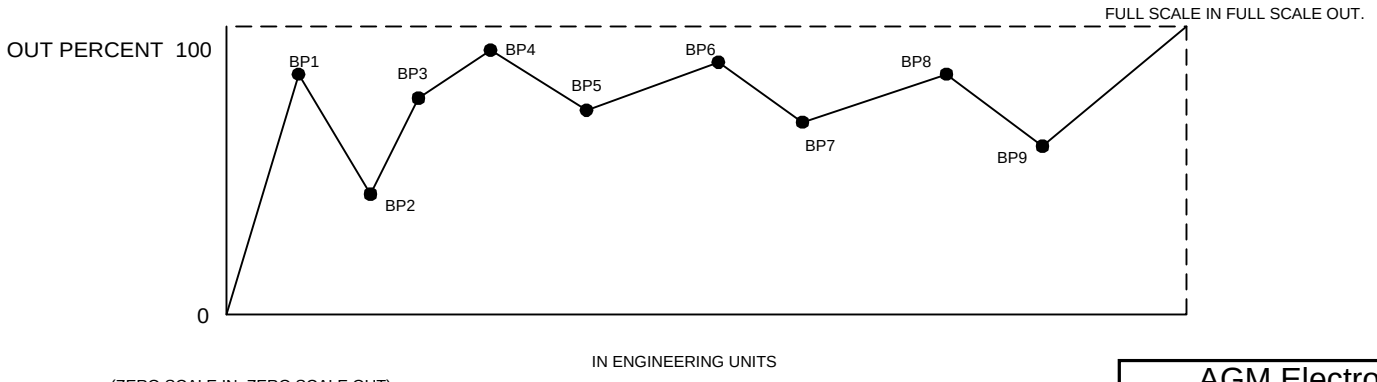
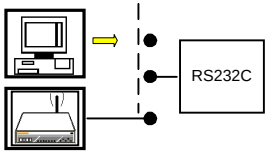
Algorithms

Field-Equipment







Legend

(x) = Algorthim Number

( ) = Wiring Table Designations. Refer to Page 2 of WSD (Figure 2) drawing for physical layout/connection location.

● = Begin Algorithm

■ = End Algorithm

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Knowledge Map			
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Checked By			SO#
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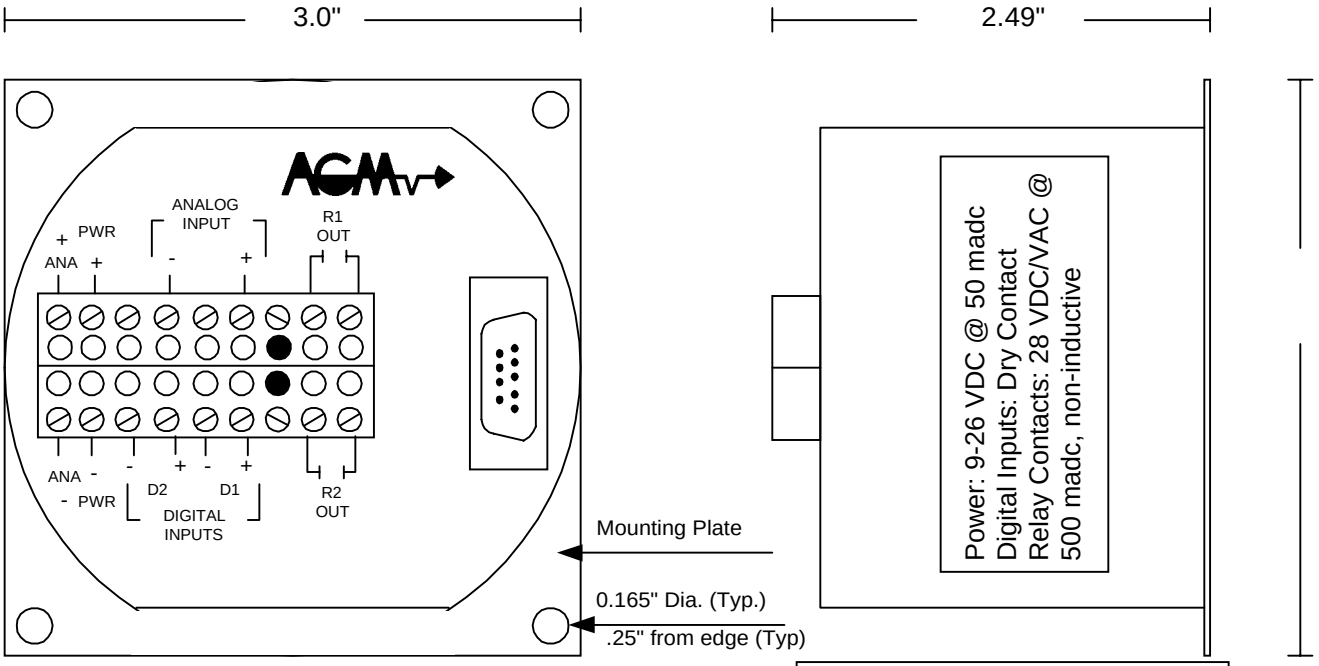

Power: 9-26 VDC @ 50 madc
Digital Inputs: Dry Contact
Relay Contacts: 28 VDC/VAC @ 500 madc, non-inductive

Data Handler Operations

The Data Handler (SPM 9000-D2N) is designed to scale an analog input into engineering units, and the engineering units are used to control the analog output. The input/output breakpoints are settable in any configuration, Linear, Square root, Logs or Inverted.

Active Commands

Command	Description	Results
VERS	**Data handler version**	**Display Version of Data Handler**
CD	**Configure Data**	**Enable Configure Routines**
DA	**Dump Data**	**Dumps all stored records to diplay or record**
RD	**Read Data**	**Displays engineering units of inputs**

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To access the DH configuration, first connect the DH puk to your computer's serial communication port using a straight through RS232 cable. Then start a terminal program. You can use any terminal program that supports serial ASCII communications or you can use the SCADA program supplied with this shipment. The communications parameters for this DH puk is set at 1200 baud, no parity, 8 data bits and 1 stop bit.
To start configuration enter "CD" without the quotes and followed by a carriage return (Enter Key). The DH puk will respond with the following. To change any settings, enter the new setting after the prompt. To keep the current setting, enter a carriage return only. If you make an error while entering the new value, use the backspace key to back up and reenter the correct value.

Date : MM/DD/YY : This message will display the current date as seen from the data handler. If different than the actual date then enter it as it is formatted above (i.e. MM/DD/YY, example 03/13/90).
Time : HH:MM:SS : This message will display the current time as seen from the data handler. If different than the actual time then enter it as it is formatted above (i.e. HH:MM:SS, example 01:30:00). Please note this is a 24 hour clock so midnight is 23:59:59. Hit <CR> to complete the step.
Avg. delay (1 sec) : This entry is used to set the analog input filter delay in seconds. The analog input will be averaged for the time specified before it is used as an actual input.
Cal. Input (N) : The default is "N". If carriage return is pressed, the configuration will continue with the next line allowing changes of the engineering units without physically putting in the 0% and 100% analog signal levels. If a "Y" is entered, the actual relationship between the physical input and engineering units will be changed. **This requires applying the raw input signals to the analog input. If you do not have a means to enter the raw signals at this time do not enter "Y".**
Enter Zero Input (0.0000) : This message will be displayed to prompt you to set the zero scale engineering units.
Enter Full Input (100.0000) : Enter in the desired value for data logging when the input is at full scale. This will complete the calibration process.
Enter Zero Output (655): This is used by the digital to analog converter to generate an analog output. An entry of 650 will produce roughly 4 madc output with an input of zero percent.
Enter Full Output (3285): This is used by the digital to analog converter to generate an analog output. An entry of 3285 will produce about 20 madc output with 100 percent input.
Enter BP1 (IN: , OUT: %): This and the following BP# entries define the breakpoints for output linearization. The zero scale and full scale endpoints are defined above where the zero scale engineering unit input is matched with the zero output value and the full scale input is matched with the full scale output. All **OUTPUT values** entered in the BP# entries should be in percent of output. All **IN values** are to be in engineering units.
Enter BP# (IN: , OUT: %): Repeat the above entry process for all BP# points, where # is one less than the number of breakpoints specified.
Reconfig Communication Setting (N): Enter "Y" to proceed with more communication port setups.
Config:-1: This entry is used to set addressing mode and specific RS232 line protocols.
Addr:-1: If addressing is used, enter the units address. Valid addresses are integers between 0 and 255.
Baud:-1: The puk can operate at 300 or 1200 or 9600 baud. The default (-1) is 1200 baud, an entry of (3) is 300 baud and (96) is 9600 baud.
RTSdly: 10x, 0x 20msec: This message will display the RTS delay setting.
Reconfig Storage Settings (N): This message verifies that you want to configure the DH memory. Doing so will write over any previously recored data, so you can quit now by hitting <CR> or type 'Y" <CR> to proceed.
Date format(3): This entry defines the amount of date information stored with each data point. Enter a number, 0-3 from the table below to set the date format. Memory allocation is also listed, the input reading uses 2 bytes per record. 0 = No date information recorded. 1 = Day of month only recorded (add 2 bytes per record). 2 = Month/Day recorded (add 4 bytes per record). 3 = Month/Day/Year recorded (add 6 bytes per record)
Time format(3): This entry is used to configure what time information will be stored with each datapoint. 0 = No time information recorded. 1 = Minutes only recorded (add 2 bytes per record). 2 = Hour:Minute recorded (add 4 bytes per record). 3 = Hour:Minute:Second recorded (add 6 bytes per record).
Store (300 sec): Enter the delay between data logging in seconds.
Prec.(62): This entry is used to set display precision. To disable this function enter "0". This will reset the display to the default values. (i.e. 66). The most significant byte is the maximum field width and the least significant byte is the number of digits displayed to the right of the decimal.

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