Algorithm Set Up Group

Introduction

This data deals with various control algorithms and Timer functions.

The Timer section allows you to configure a time-out period and to select the timer start by either the keyboard (**RUN/HOLD** key) or Alarm 2. An optional digital input can also be configured to the start the timer. The timer display is selectable as either "time remaining" *(see TI REM)* or "elapsed time" *(see E TIME).*

Alarm 1 is activated at the end of the time-out period. When the timer is enabled, it has exclusive control of the alarm 1 relay—any previous alarm 1 configuration is ignored. At time-out, the timer is ready to be activated again by whatever action has been configured.

Function Prompts

Table Error! No text of specified style in document.**-1 ALGORTHM Group Function Prompts**

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
CONT ALG		**CONTROL ALGORITHM FOR LOOP 1**—The Control Algorithm lets you select the type of control that is best for your process.
	ON-OFF	**ON/OFF**—The simplest control type. The output can be either ON (100 %) or OFF (0 %). The Process Variable (PV) is compared with the setpoint (SP) to determine the sign of the error (ERROR = PV–SP). The ON/OFF algorithm operates on the sign of the error signal. In Direct Acting Control, when the error signal is positive, the output is 100 %; and when the error signal is negative, the output is 0 %. If the control action is reverse, the opposite is true. An adjustable overlap (Hysteresis Band) is provided between the on and off states. **ATTENTION** *Other prompts affected: OUT HYST* **DUPLEX ON/OFF**—This an extension of the ON-OFF algorithm when the output is configured for a Duplex control algorithm. It allows the operation of a second ON/OFF output. There is a deadband between the operating ranges of the two inputs and an adjustable overlap (hysteresis) of the on and off states of each output. Both Deadband and Hysteresis are separately adjustable. With no relay action the controller will read 50 %. **ATTENTION** *Other prompts affected: OUT HYST and DEADBAND*

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
	PID A **ATTENTION** PID A should not be used for Proportional only action; i.e., no integral (reset) action. Instead, use PD+MR with rate set to 0.	**PID A**—This normally used for three-mode control. Three mode control means that the output can be adjusted to be at any point between 0 % and 100 %. It applies all three control actions—Proportional (P), Integral (I), and Derivative (D)—to the error signal. **Proportional (Gain)**—Regulates the controller's output in proportion to the error signal (the difference between Process Variable and Setpoint). **Integral (Reset)**—Regulates the controller's output to the size of the error and the time the error has existed. (The amount of corrective action depends on the value of proportional Gain.) **Derivative (Rate)**—Regulates the controller's output in proportion to the rate of change of the error. (The amount of corrective action depends on the value of proportional Gain.)
	PID B	**PID B**—Unlike the PID A equation, the controller gives only an integral response to a setpoint change, with no effect on the output due to the gain or rate action, and it gives full response to PV changes. Otherwise controller action is as described for the PID A equation. See note on PID A.
	PD+MR	**PD WITH MANUAL RESET**—This is used whenever integral action is not wanted for automatic control action. The equation is computed with no integral contribution. The MANUAL RESET value, which is operator adjustable, is then added to the present output to form the controller output. Switching between manual and automatic mode is bumpless (output does not change value). If you select PD with Manual Reset you can also configure the following variations: • PD (Two Mode) control, • P (Single Mode) control. Set Rate (D) to 0. **ATTENTION** *Other prompts affected: MAN RSET in the Tuning Set Up group*

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
	3PSTEP	**THREE POSITION STEP**—The Three Position Step Control algorithm allows the control of a valve (or other actuator) with an electric motor driven by two controller relay outputs; one to move the motor upscale, the other downscale without a feedback slidewire linked to the motor shaft. The deadband is adjustable in the same manner as the duplex output algorithm. The Three Position Step Control algorithm provides an output display (OUT) which is an estimated motor position, since the motor is not using any slidewire feedback. Although this output indication is only an approximation, it is "corrected" each time the controller drives the motor to one of its stops (0 % or 100 %). It avoids all the control problems associated with the feedback slidewire (wear, dirt, noise). When operating in this algorithm, the estimated OUT display is shown to the nearest percent (i.e., no decimal). This selection forces the Output Algorithm selection to "POSPROP". Refer to the *Operation* section for motor position displays. As a customer configurable option, when a third input board is installed, the motor slidewire can be connected to the controller. The actual slidewire position is then shown on the lower display as POS. **This value is used for display only. It is NOT used in the Three Position Step algorithm.** To configure this option, set Input 3 actuation to SLIDEW and then calibrate Input 3. **ATTENTION** *Other prompts affected: DEADBAND*
PID LOOPS		**PID LOOPS**—Number of PID Loops to be used.
	1 LOOP	**1 LOOP**—Select one loop of control.
	2 LOOPS	**2 LOOPS**—Select two independent loops of control, each with its own PID tuning sets and control parameters.
	CASCADE	**CASCADE**—Select Cascade Control. In a Cascade control system, the output of one PID loop is used to adjust the setpoint of the second control loop. The second control loop is sent to the final control element.

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
CONT2ALG		**CONTROL ALGORITHM FOR LOOP 2**—This prompt only appears if Two Loop or Cascade control has been selected. 3PSTEP and ON-OFF control are not available on the Second Control Loop.
	PID A PID B PD+MR	**PID A**—Same as Loop 1. **PID B**—Same as Loop 1. **PD WITH MANUAL RESET**—Same as Loop 1.
OUT OVRD		**OUTPUT OVERRIDE SELECT**—This selection lets you select high or low output override. Only available if the controller is configured for Two Loop operation. Not applicable for Three Position Step applications. **ATTENTION** Loop 1 must be in Automatic for this selection to work. While the output is being overridden, a blinking "O" appears on the left of the upper display.
	DISABLE	**DISABLE**—Disables the override function
	HI SEL	**HIGH SELECT**—The controller will select the higher of output 1 or output 2 and direct it to the rear terminals for output 1.
	LO SEL	**LOW SELECT**—The controller will select the lower of output 1 or output 2 and direct it to the rear terminals for output 1.
TIMER	DISABLE ENABLE	**TIMER**—Enable or disable the timer option. The timer option allows you to configure a timeout period and to select timer start by either the keyboard (via the Run Hold key) or Alarm 2. A digital input can also be configured to start the timer. When the timer is enabled, it has exclusive control of the alarm 1 relay; any previous alarm configuration is ignored. At timeout, the timer is ready to be re-activated by whatever action has been configured. Alarm 1 is activated at the end of the timeout period.
PERIOD	0:00 to 99:59	**PERIOD**—The length of timeout period (either from 0 to 99 hours: 59 minutes or from 59 minutes: 59 seconds depending upon Period configuration).
START	KEY ALARM 1	**START**—Select whether the timer starts with the keyboard (via the Run Hold key) or via Alarm 1.

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
LWR DISP	TI REM EL TIME	**LOWER DISPLAY**—Select whether time remaining (TI REM) or elapsed time (EL TIME) is displayed for the timer option. The time is shown on the lower display in HH:MM format along with a rotating "clock" character. • If the "clock" rotation is *clockwise,* elapsed time is indicated. • If the "clock" rotation is *counterclockwise,* time remaining is indicated.
RESET	KEY ALARM 1	**RESET TIMER**—Select whether the timer is reset with the keyboard (via the Run Hold key) or via Alarm 1.
INCRMENT	MINUTE SECOND	**INCREMENT**—Select the increments of the Period configuration.
INPUT MATH ALGORITHMS—Controllers with at least two analog inputs are provided with two input algorithms. Each algorithm can be configured to provide a derived (calculated) PV or a derived Remote Setpoint. Up to three inputs may be used in each algorithm. In addition, the two algorithms may be "linked" so as to combine the calculations by configuring one algorithm to be an input to the other algorithm. All algorithms operate in Engineering Units except Feedforward which operates in percent of range units. **ATTENTION** When the Input C configuration is set to NONE, the value of Input C used in the functions is automatically set to 1.0, except for the Summer algorithm, where it is set to 0.0.		
INP ALG1	NONE W AVG (See Note 2) (Standard feature on controllers with two or more analog inputs)	**INPUT ALGORITHM 1**—Represents one of the following selections: **NONE**—No algorithm configured **WEIGHTED AVERAGE**—When you configure for Weighted Average, the controller will compute a PV or SP for the control algorithm from the following equation: Alg1 = [(Input A x Ratio A + Bias A) + (K x Input B x Ratio B + Bias B)] / (1 + K)] + Alg1Bias

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
	F FWRD (Standard feature on controllers with two or more analog inputs)	**FEEDFORWARD SUMMER**—Feedforward uses Input 2, following a Ratio and Bias calculation, as a value summed directly with the PID computed output value and sent, as an output value, to the final control element. This algorithm will only function in automatic mode and is not used for Three Position Step Control applications. The following formula applies: Controller Output = PID Output + (Input 2 x Ratio 2 + Bias A2) x (100 / Input 2 Range)
	FFWDMu (Standard feature on controllers with two or more analog inputs)	**FEEDFORWARD MULTIPLIER**—Feedforward uses Input 2, following a Ratio and Bias calculation, as a value multiplied directly with the PID computed output value and sent, as an output value, to the final control element. This algorithm will only function in automatic mode and cannot be used for Three Position Step Control applications. The following formula applies: Controller Output = PID Output x (Input 2 x Ratio 2 + Bias 2) / Input 2 Range
	RELHUM (Standard feature on controllers with two or more analog inputs)	**RELATIVE HUMIDITY**—Input 1 reads the wet bulb temperature. Input 2 reads the dry bulb temperature. The controller will indicate measured Relative Humidity as a Process Variable (PV) with a Setpoint range of 0 % to 100 % RH. **ATTENTION** The Relative Humidity selection will automatically force both Input 1 and Input 2 actuations to the RTD 100 ohm low setting.
	SUMMER (See Note 2)	**SUMMER WITH RATIO AND BIAS**—The following formula applies: Alg1 = (Input A x Ratio A + Bias A) + (Input B x Ratio B + Bias B) + (Input C x Ratio C + Bias C) + Alg1Bias
	HI SEL (See Note 2)	**INPUT HIGH SELECT WITH RATIO AND BIAS**—This selection specifies the PV or SP as the higher of Input A or Input B. The following formula applies: Alg1 = higher of (Input A x Ratio A + Bias A) or (Input B x Ratio B + Bias B)
	LO SEL (See Note 2)	**INPUT LOW SELECT WITH RATIO AND BIAS**—This selection specifies the PV or SP as the lower of Input A or Input B. The following formula applies: Alg1 = lower of (Input A x Ratio A + Bias A) or (Input B x Ratio B + Bias B)

Function Prompt Lower Display	Selections or Range of Setting Upper Display	Parameter Definition
	√MuDIV (See Note 1)	**MULTIPLIER DIVIDER WITH SQUARE ROOT**—The following formula applies:
Alg1 = K * Sq.Rt. {(Input A x Ratio A + Bias A) x (Input C x Ratio C + Bias C) / (Input B * Ratio B + Bias B)} x (Calc Hi – Calc Lo) + Alg1Bias		
	See** Error! Reference source not found. **at the end of this section for an example of Mass Flow Compensation using the Multiplier/Divider Algorithm.	
	√MULT (See Note 1)	**MULTIPLIER WITH SQUARE ROOT**—The following formula applies:
Alg1 = K x Sq.Rt.{(Input A x Ratio A + Bias A) x (Input B x Ratio B + Bias B) x (Input C x Ratio C + Bias C)} x (Calc Hi – Calc Lo) + Alg1Bias		
	MuDIV (See Note 1)	**MULTIPLIER DIVIDER**—The following formula applies:
Alg1 = K x [{(Input A x Ratio A + Bias A) x (Input C x Ratio C + Bias C)} / (Input B x Ratio B + Bias B)] x (Calc Hi – Calc Lo) + Alg1Bias		
	MULT (See Note 1)	**MULTIPLIER**—The following formula applies:
Alg1 = K x [(Input A x Ratio A + Bias A) x (Input C x Ratio C + Bias C) x (Input B x Ratio B + Bias B)] x (Calc Hi – Calc Lo) + Alg1Bias		
	CARB A	**CARBON POTENTIAL A**—Make this selection if you have a Cambridge or Marathon monitor type Zirconium Oxide sensor. This algorithm requires a temperature range within the region of 1380 to 2000°F. See Carbon/Oxygen/Dewpoint Notes.
	CARB B	**CARBON POTENTIAL B**—Make this selection if you have a Corning type Zirconium Oxide sensor. This algorithm requires a temperature range within the region of 1380 to 2000°F. See Carbon/Oxygen/Dewpoint Notes.
	CARB C	**CARBON POTENTIAL C**—Make this selection if you have an A.A.C.C. type Zirconium Oxide sensor. This algorithm requires a temperature range within the region of 1380 °F to 2000 °F. See Carbon/Oxygen/Dewpoint Notes.

Function Prompt Lower Display	Selections or Range of Setting Upper Display	Parameter Definition
	CARB D	**CARBON POTENTIAL D**—Make this selection if you have a Barber Coleman, MacDhui, or Bricesco type Zirconium Oxide sensor. This algorithm requires a temperature range within the region of 1380 to 2000°F. See Carbon/Oxygen/Dewpoint Notes.
	FCC	**CARBON POTENTIAL FCC**—Make this selection if you have a Furnace Controls Corp Accucarb type Zirconium Oxide sensor. This algorithm requires a temperature range within the region of 1380 °F to 2000 °F. See Carbon/Oxygen/Dewpoint Notes.
	DEW PT	**DEWPOINT OF CARBONIZING ATMOSPHERE**—Use this selection if you are using any Zirconium Oxide Carbon Probe and you want to measure the atmosphere in terms of Dewpoint. The range is –50 °F to 100 °F or –48 °C to 38 °C. This algorithm requires a temperature range within the region of 1000 °F to 2200 °F and a minimum carbon probe value of 800 millivolts. See Carbon/Oxygen/Dewpoint Notes
	OXYGEN	**PERCENT OXYGEN RANGE**—Make this selection if you are using a Zirconium Oxide Oxygen Probe to measure Percent of Oxygen in a range of 0 to 40 % O_2. This algorithm requires a temperature range within the region of 800 °F to 3000 °F. See Carbon/Oxygen/Dewpoint Notes.

ATTENTION **Carbon/Oxygen/Dewpoint Notes**

- The Carbon and Dewpoint selections will automatically set Input 1 actuation to CARBON. The Oxygen selection will automatically set Input 1 actuation to OXYGEN.
- Input 2 can be any input actuation, but it is normally a type K, R or S thermocouple input, depending upon the probe type selected.
- All calculations are performed by the Controller with Percent Carbon, Percent Oxygen or Dewpoint shown as the PV display. The actual value of each analog input may be viewed via the lower display.
- For all Carbon Types, if the value of Percent Carbon falls below 0.1% - such as can happen when the Carbon Probe voltage output falls below 900 mVdc – then the Controller will continue to update the PV display, but the accuracy is unspecified. Likewise, if the measured temperature falls outside of the specified ranges as noted above for the Carbon, Oxygen and Dewpoint input types, then the Controller will continue to update the PV display, but the accuracy is unspecified.
- For the Dewpoint algorithm, if the Carbon Sensor voltage falls below 800 mVdc, then the Dew Point is calculated as if the sensor voltage was at 800 mVdc.
- If the Ratio for Input 2 is set to 0.0, then a constant value may be used for the Input 2 value via the Input 2 Bias setting. When Input 2 Ratio is set to 0.0, the Input 2 low range and Sooting diagnostic messages are disabled.

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
MATH K	0.001 to 1000 floating	**WEIGHTED AVERAGE RATIO OR MASS FLOW ORIFICE CONSTANT (K) FOR MATH SELECTIONS**—Only applicable for algorithms W AVG or General Math selections √MuDIV, √MULT, MuDIV, or MULT.
CALC HI	–999. To 9999. Floating (in engineering units)	**CALCULATED VARIABLE HIGH SCALING FACTOR FOR INPUT ALGORITHM 1**—Used only when either Summer, Input Hi/Lo, or one of the General Math functions was selected as the Input Algorithm. See Note 2.
CALC LO	–999. To 9999. Floating (in engineering units)	**CALCULATED VARIABLE LOW SCALING FACTOR FOR INPUT ALGORITHM 1**—Used only when either Summer, Input Hi/Lo, or one of the General Math functions was selected as the Input Algorithm. See Note 2.
ALG1 INA	INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 1, INPUT A SELECTION**—Represents one of the following selections: **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**
ALG1 INB	INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 1, INPUT B SELECTION**—Represents one of the following selections: **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
ALG1 INC	NONE INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 1, INPUT C SELECTION**—Represents one of the following selections: **NONE** **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**
PCO SEL	MANUAL INPUT 3	**SOURCE OF PERCENT CARBON MONOXIDE**—Select either a fixed value for %CO value (PCT CO) or use a live value from Analog Input 3. **MANUAL**—Operator enters %CO as a Fixed Value per the PCT CO configuration. **INPUT 3**—Input 3 is used to provide the %CO value to the Carbon Potential algorithm. **ATTENTION** This prompt only appears when one of the Carbon Potential algorithms is selected and Input 3 is one of the following types: 0-20 mA, 4-20 mA, 0-5 V or 1-5 V.
PCT CO	0.020 to 0.350 (fractional percent of CO)	**PERCENT CARBON**—Used only when a Carbon Potential algorithm is selected and PCO SEL is set to MANUAL Enter a value in percent of carbon monoxide that is applicable for the enriching gas used in fractional form. FOR EXAMPLE: Natural Gas = 20.0 % CO, then setting is 0.200 Propane Gas = 23.0 % CO, setting is 0.230 **ATTENTION** This prompt only appears when one of the Carbon Potential algorithms is selected.
PCT H2	1.0 to 99.0 (% H_2)	**HYDROGEN CONTENT FOR DEWPOINT**—Used only when Dewpoint is selected. Enter a value for the percentage of Hydrogen content that is applicable.
ATM PRES	590.0 to 760.0 (mm Hg)	**ATMOSPHERIC PRESSURE COMPENSATION**—Used only when Relative Humidityis selected. Enter the value of the atmospheric pressure of the process.

Function Prompt Lower Display	Selections or Range of Setting Upper Display	Parameter Definition
ALG1BIAS	-999 to 9999 floating (in engineering units)	**INPUT ALGORITHM 1 BIAS**—Does not apply to selections: FFWRD, FFWDMU, HISEL or LOSEL.
ATTENTION • All Input Algorithms operate in engineering units except Feed-forward which operates in percent of range units. • For General Math functions, when Input C is disabled, the value of Input C used in the functions is automatically set to 1.0.		
INP ALG2	NONE W AVG F FWR2 FFWDM2 A-B/C HI SEL LO SEL √MuDIV √MULT MuDIV MULT DEW PT	**INPUT ALGORITHM 2**—The formulas for these selections are the same as those for IN ALG 1 with the following exceptions: Relative Humidity, all Carbon Potential and Oxygen algorithms are not available. **ATTENTION** Selection **A–B/C** algorithm is used in place of IN ALG1 **A+B+C** algorithm. The A-B/C algorithm subtracts Input B with Ratio/Bias from Input A with Ratio/Bias and divides the result by Input C with Ratio/Bias using engineering units. This selection is only available on Input Algorithm 2. EXAMPLE: PV or SP = K $\frac{(A–B)}{C}$ (Calc Hi – Calc Lo)
MATH K2	0.001 to 1000 floating	**WEIGHTED AVERAGE RATIO OR MASS FLOW ORIFICE CONSTANT (K) FOR MATH SELECTIONS**—Only applicable for algorithm W AVG or General Math selections |MuDIV, |MULT, MuDIV, or MULT.
CALC HI	–999. To 9999. Floating (in engineering units)	**CALCULATED VARIABLE HIGH SCALING FACTOR FOR INPUT ALGORITHM 2**—Does not apply to Feedforward algorithms. Range is used for either PV or RSP, depending upon Algorithm application.
CALC LO	–999. To 9999. Floating (in engineering units)	**CALCULATED VARIABLE LOW SCALING FACTOR FOR INPUT ALGORITHM 2**—Does not apply to Feedforward algorithms. Range is used for either PV or RSP, depending upon Algorithm application.

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**
ALG2 INA	INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 2, INPUT A SELECTION**—Represents one of the following selections: **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**
ALG2 INB	INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 2, INPUT B SELECTION**—Represents one of the following selections: **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**
ALG2 INC	NONE INPUT 1 INPUT 2 INPUT 3 INPUT 4 INPUT 5 LP1OUT LP2OUT IN AL1 IN AL2	**ALGORITHM 2, INPUT C SELECTION**—Represents one of the following selections: **NONE** **INPUT 1** **INPUT 2** **INPUT 3** **INPUT 4** **INPUT 5** **LOOP 1 OUTPUT**—Should not be used for Three Position Step Control applications **LOOP 2 OUTPUT**—Should not be used for Three Position Step Control applications **INPUT ALGORITHM 1** **INPUT ALGORITHM 2**
ALG2BIAS	-999 to 9999 floating (in engineering units)	**INPUT ALGORITHM 2 BIAS**—Does not apply to selections: FFWR2, FFWM2, HI SEL or LO SEL.

Function Prompt Lower Display	**Selections or Range of Setting** Upper Display	**Parameter Definition**

Math Algorithm Notes:

1. Calculation ranges for the Math Algorithms are set via CALC HI and CALC LO parameters and are between –999. and 9999. The SP High and Low values (SP Range) are independent of these settings and can be any value between –999. and 9999.
2. The CALC HI and CALC LO values determine the range limits for the SP High and Low values for the Weighted Average, Summer, Hi Select and Low Select algorithms.
3. Does not apply to Three Position Step Control.
4. If the calculated value of the quantity under the square root sign decreases to a value less than 0.010, then the calculation will become linear as the calculated value decreases below 0.010.
5. Input 2 is always used in all of the Feedforward algorithms.