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PG/APO/V5/0217

PROGRAMMING GUIDE

ALPHA+ - A / 3A / V / 3V / VAF / 3VAF

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1. FEATURES

- STAR (Wye)/ DELTA/1 phase programmable (3V, 3A,3VAF)
- PT ratio programmable (V, 3V, VAF & 3VAF)
- CT ratio programmable including CT secondary (A , 3A, VAF & 3VAF)
- Universal Voltage Input (80 - 550 VAC) and Current Secondary (0.05 to 6A)
- Universal Auxiliary (80 - 300 VAC / DC) supply
- Simultaneous sampling of Volts & Amps
- True RMS measurement

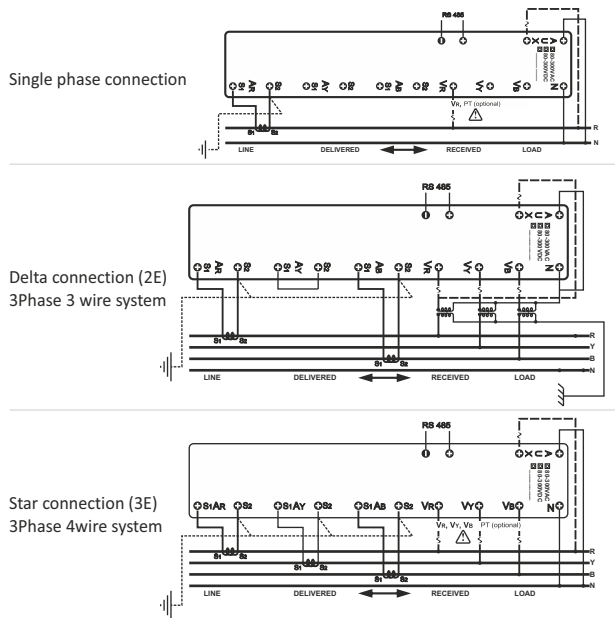
2. UNIQUE FEATURES

- Optional Programmable relay output maximum 2 and tripping time up to 180 seconds.
- 1 channel Analog output (0 to Full Scale/ 4 to 20mA)
- Clearance & creepage distance meets UL 61010 standard
- 1Row, 4digit display
- Auto-scaling of kilo decimal point.
- Compact size and light weight
- Optional RS485

3. KEY FUNCTIONS

Key	In SET (Programming) mode	In RUN (Measurement) mode
	To select the value and accept the value (it act as a Right key in programming mode)	To scroll pages in UPWARD direction and view different parameters
	To edit the value/system types downward in edit mode and scroll through the parameters.	To scroll pages in DOWNWARD direction and view different parameters

4. WIRING DIAGRAM - Alpha Plus Series



5. LED INDICATION

LED Status	Alpha+ 3A - Meaning	LED Status	Alpha+ VAF - Meaning
R - ON	R Phase Amps	K - ON	Kilo
Y - ON	Y Phase Amps	VLN - ON	Voltage Line to Neutral
B - ON	B Phase Amps	A - ON	Amps
K - ON	Kilo	Hz	Frequency
RYB - ON	Amps Average Value		Communication ON
	Communication ON	LED Status	Alpha+ 3VAF - Meaning
R - ON	R Phase Voltage(VLN)	R & A - ON	R Phase Amps
Y - ON	Y Phase Voltage (VLN)	Y & A - ON	Y Phase Amps
B - ON	B Phase Voltage (VLN)	B & A - ON	B Phase Amps
Hz	Frequency	Hz	Frequency
RY - ON	R-Y Voltage (VLL)	RY & VLL - ON	R-Y Voltage (VLL)
YB - ON	Y-B Voltage (VLL)	YB & VLL - ON	Y-B Voltage (VLL)
BR - ON	B-R Voltage (VLL)	BR & VLL - ON	B-R Voltage (VLL)
K - ON	Kilo	R & VLN - ON	R Phase Voltage (VLN)
RYB- ON	VLL Average Value	Y & VLN - ON	Y Phase Voltage (VLN)
RYB- OFF	VLN Average Value	B & VLN - ON	B Phase Voltage (VLN)
	Communication ON	VLL	Voltage Line to Line
	Communication ON	VLN	Voltage Line to Neutral
LED Status	Alpha+ A/V - Meaning	A	Amps
K - ON	Kilo		Communication ON
	Communication ON	K - ON	Kilo

6. ENTERING CONFIGURATION (SETUP) MODE

To configure the setup parameters through front panel, the following steps can be followed.

Step	Actions	Display Reads	Range/Options/Comments
1	Press RIGHT & DOWN keys together to enter SETUP	first digit "0" blinking	
2	Press DOWN key to decrement the first digit to "9" sequentially come to digit 1.	first digit "1" blinking.	If any other password is already set press RIGHT and DOWN key to reach the right password
3	Press RIGHT key four times to accept the password.	ELEMENT Defines the power system configuration	Press RIGHT key to view options. Options: STAR /DELTA/ SINGLE PHASE (Applicable only for 3V, 3A & 3VAF models)
4	Press RIGHT key to select STAR/DELTA/1. PHASE	selected system blinks	Options can be changed by pressing DOWN key.
5	Press RIGHT key to accept the edited mode	Selected system stabilizes	
6	Press DOWN key	PT Primary	Applicable only for V, 3V, VAF & 3VAF models

7	Press RIGHT key to view PT primary value	415.0	415.0 : Default /factory set
8	Press RIGHT key to edit the value	415.0	First digit blinks Edit the digit using DOWN key.
9	Press RIGHT key to accept the edited value for first digit.	415.0	Program Range for PT Primary : 100V to 999kV
10	Press RIGHT key	415.0	Ex: To set 11.00kV Set first four digits (1100) as explained above keep pressing DOWN key to place decimal point at appropriate location. K LED indicate Kilo.
11	Press DOWN key	P.5EC	PT Secondary Range: 50V to 550V
12	Press RIGHT key to view PT Secondary value	415.0	415.0 : default/factory set. Repeat steps 8 to 10 to change the settings.
13	Press DOWN key	C.Pr1	CT Primary Range:0.5A to 99kA Applicable only for A , 3A, VAF & 3VAF models

28	Press RIGHT Key to view the value	9600	Options: 600,1200, 2400,4800,9600, 19.20k. The required value can be selected using DOWN key. Press RIGHT key to accept the selected value.
29	Press DOWN key	Prty	Internal communication error check
30	Press RIGHT Key to view the option	EVEN	EUEn (even)/odd (odd)/no(no parity) The required value can be selected using DOWN key. Press RIGHT key to accept the selected option.
31	Press DOWN key	dUId	device ID Defines the (ID) communications identification number.
32	Press RIGHT Key to view the value	1000	Repeat steps 8 to 10 to change the settings. Option:1 to 247
33	Press DOWN key	An.OP	Analog output Press RIGHT Key to view the options Options: 1. A & 3A A, dSbL 2. V- VLL, dSbL 3. 3V- VLL/VLn,F,dSbL 4. VAF - VLn, A, F, dSbL 5. 3VAF - VLL/VLn, A, F, dSbL 6. F & RPM F, dSbL

14	Press RIGHT key to view CT Primary value	5.000	5.000 : default/factory set. Repeat steps 8 to 10 to change the settings.
15	Press DOWN key	C.5EC	CT Secondary Range: 0.5A to 6A
16	Press RIGHT key to view CT Secondary value	5.000	5.000 : default/factory set. Repeat steps 8 to 10 to change the settings.
17	Press DOWN key	dO1P	1st digital output parameter Press RIGHT Key to view options 1. A & 3A - Under /Over A,dSbL 2. V- Under /Over V,dSbL 3. 3V- Under/Over V,F,dSbL 4. VAF,3VAF Under/Over V,A,F, dSbL 5. F & RPM - Under /Over F,dSbL
18	Press RIGHT key to select the required parameter	d5bL	Disable The required parameter can be selected using DOWN key. Press RIGHT key to accept the selected option.
19	Press DOWN key	d1th	Digital output 1 threshold value
20	Press RIGHT key	1000	1000 : Default/Factory set Repeat steps 8 to 10 to change the settings. Range : 0.001 to 999.9K

34	Press RIGHT Key to select the option		Blinks the option which was set previously. Press DOWN key to change the options. Press RIGHT key to accept the selected option
35	Press DOWN key	OFF.S	Offset value
36	Press RIGHT Key to view the option	0.t.FS	Options- 0.t.FS/4.t.20 Press DOWN key to change the options. Press RIGHT key to accept the selected option
37	Press DOWN key	SAUy	Save YES "y" blinking If "n"(no) is selected then Meter enters into RUN mode without affecting any edited Values in the setup

Once the required parameter is programmed press the DOWN key continuously till it reaches SAVE page.

Comment: If value set is above the maximum programmable range, display returns to maximum Programmable value.

7. The List of parameters can be configured and the range is given below

Sl.No.	Parameter	Default setup	Range / Options
1	Connection mode(ELEM)	STAR	STAR/ DELTA/ 1.Phase
2	PT Primary (PT.Pri)	415.0	100V- 999kV
3	PT Secondary (PT SEC)	415.0	50V - 550V
4	CT Primary (CT.Pri)	5.000	0.5A - 99kA

21	Press DOWN key	dO2P	2nd digital output parameter Press RIGHT Key to view options 1. A & 3A - Under /Over A,dSbL 2. V- Under /Over V,dSbL 3. 3V- Under/Over V,F,dSbL 4. VAF,3VAF Under/Over V,A,F, dSbL 5. F & RPM - Under /Over F,dSbL
22	Press RIGHT key to select the required parameter	d5bL	Disable The required parameter can be selected using DOWN key. Press RIGHT key to accept the selected option.
23	Press DOWN key	d2th	Digital output 2 threshold value
24	Press RIGHT key	1000	1000 : Default/Factory set Repeat steps 8 to 10 to change the settings. Range : 0.001 to 999.9K
25	Press DOWN key	d.dEL	Digital Output trip delay time
26	Press RIGHT Key to view the value	3000	3.000 : Default/Factory set Repeat steps 8 to 10 to change the settings. Range: 1 to 180 seconds
27	Press DOWN key	bAUd	Defines the baud rate. baud rate communication speed.

5	CT Secondary (CT SEC)	5.000	0.5A - 6A
6	1st Digital Output parameter (dO1.P)	dSbL	Options mentioned in 19
7	1st Digital Output threshold Value (d.1.th)	1000.	0.001 to 999.9K
8	2nd Digital Output parameter (dO.2.P)	dSbL	Options mentioned in 23
9	2nd Digital Output threshold Value (d.2.th)	1000.	0.001 to 999.9K
10	Digital output trip delay (d.dEL)	3.000	1.000 to 180.0 Sec
11	Baud rate (bAUd)	9600	600 to 19.2K
12	Parity (Prty)	Even	Even/ Odd/ no
13	Device Id (dU.Id)	1.000	1.000 to 247.0
14	Analog output (An.OP)	dSbL	Options mentioned in 33
15	Offset (OFF.S)	0.t.FS	0.t.FS/4.t.20mA

8. Enabling and Disabling of Auto scrolling: (Applicable only for 3A, 3V, 3VAF & VAF models)

Enabling auto scrolling: Press UP key continuously for 5 seconds or until display shows EnbL for upward scrolling. Press Down key continuously for 5 seconds or until display shows EnbL for downward scrolling.

Disabling auto scrolling: Press any key (UP/DOWN), display show dSbL and returns to normal mode.

9. Mechanical Specification:

Dimension Bezel:
96 x 96 mm (Depth 50mm behind Bezel)

Panel Cutout: 90⁺²₀ x 90⁺²₀ mm

