

Notes:



MULTILIN

GE Power Management

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GEK-105589B
TCC/IG - 02.98 - 1000

GEK-105589B

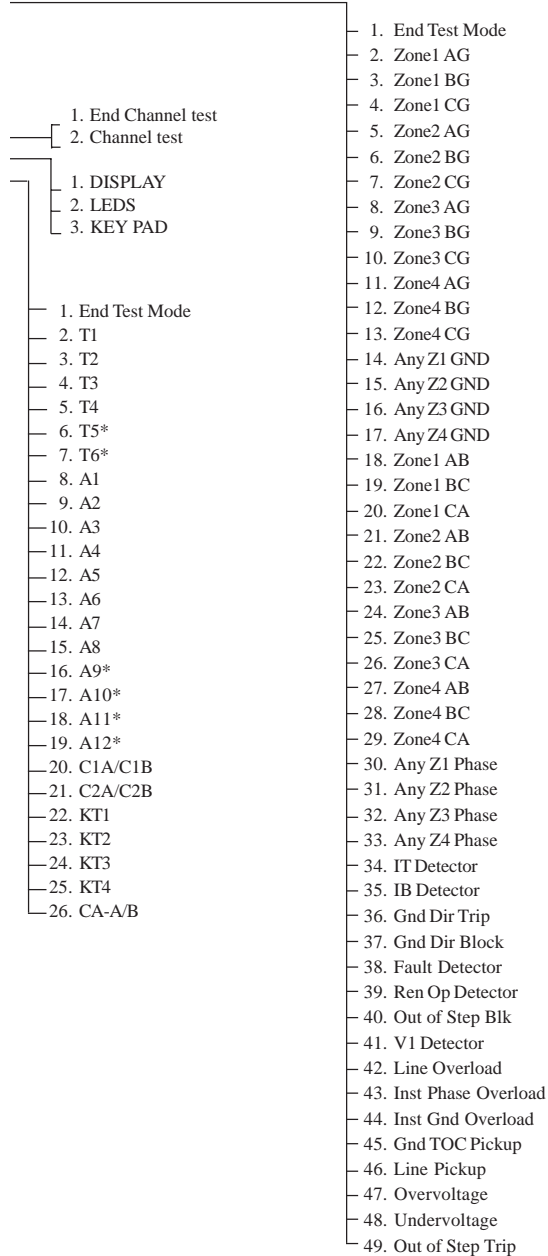
Advanced Line Protection™ System and Line Protection™ System

QUICK
REFERENCE
GUIDE



PROTECTION SETTINGS

No	Mnemonic	Description	Range
Z1DISTANCE			
101	Z1PHASE	Z1 Phase Distance	NO, YES
102	Z1PHREACH	Z1 Phase Reach	0.01-50.0
103	Z1PLEVDET	Z1 Phase Level Detector (Series Capacitor Model Only)	0.0-9.9
104	Z1GROUND	Z1 Ground Distance	NO, YES
105	Z1GRDREACH	Z1 Ground Reach	0.01-50.0
106	Z1GRDCHAR	Z1 Ground Characteristic	MHO, REACT
107	Z1SUREACH	Z1 Ground Reactance Mho Supervision Reach	0.01-50.0
108	Z1GROUNDKO	Z1 Ground KO	1.0-7.0
109	Z1GLEVDET	Z1 Ground Level Detector (Series Capacitor Model Only)	0.0-9.9
110	Z1BLOCK	Blocking Supervision of Z1	NO, YES
Z2DISTANCE			
201	Z2PHASE	Z2 Phase Distance	NO, YES
202	Z2PHREACH	Z2 Phase Reach	0.01-50.0
203	Z2PCHARANG	Z2 Phase Characteristic Angle	90-120
204	Z2GROUND	Z2 Ground Distance	NO, YES
205	Z2GRDCHAR	Z2 Ground Characteristic	MHO,GDOC MHOGDOC
206	Z2GRDREACH	Z2 Ground Reach	0.01-50.0
207	Z2GCHARANG	Z2 Ground Characteristic Angle	90-120
208	Z2TIMERS	Z2 Timers	NO, YES
209	Z2P_TIME	Z2 Phase Time	0.10-3.0
210	Z2G_TIME	Z2 Ground Time	0.10-3.0
Z3DISTANCE			
301	Z3PHASE	Z3 Phase Distance	NO, YES
302	Z3PHREACH	Z3 Phase Reach	0.01-50.0
303	Z3PCHARANG	Z3 Phase Characteristic Angle	90-120
304	Z3GROUND	Z3 Ground Distance	NO, YES
305	Z3GRDREACH	Z3 Ground Reach	0.01-50.0
306	Z3GCHARANG	Z3 Ground Characteristic Angle	90-120
307	Z3P_TIME	Z3 Phase Time	0.10-10.0
308	Z3G_TIME	Z3 Ground Time	0.10-10.0
Z4DISTANCE			
401	Z4PHASE	Z4 Phase Distance	NO, YES
402	Z4PHREACH	Z4 Phase Reach	0.01-50.0
403	Z4PCHARANG	Z4 Phase Characteristic Angle	80-120
405	Z4GROUND	Z4 Ground Distance	NO, YES
406	Z4GRDREACH	Z4 Ground Reach	0.01-50.0
407	Z4GCHARANG	Z4 Ground Characteristic Angle	80-120
408	Z4DIRECTN	Z4 Direction	FORWRD, REVERSE
409	Z4TIMERS	Z4 Timers	NO, YES
410	Z4P_TIME	Z4 Phase Time	0.10-10.0
411	Z4G_TIME	Z4 Ground Time	0.10-10.0
CURSUPVISN			
501	IT_PICKUP	Trip Sup'v'n Current	0.20-4.0
502	IB_PICKUP	Block Sup'v'n Current	0.20-4.0
503	IPT_PICKUP	GDOC Trip Current	0.50-5.0
504	IPB_PICKUP	GDOC Block Current	0.25-3.75
505	IPBKFACTOR	IPB11 Restraint	0.0,0.066
506	NT_OFFSET	NT/NB Offset	0.0-20.0
507	UNBALALARM	Unbalanced Current Alarm	NO, YES
OVERCURRENT			
601	50P	Phase Inst. Overcurrent	NO, YES
602	50_DIRCNL	Directional Control 50	NO, YES
603	50PICKUP	50 Pickup Setting	2.0-160.0
604	50PICKUPFF	50 Pickup during fuse failure	2.0-160.0
605	50G	Ground Inst. Overcurrent	NO, YES



*Single Pole Tripping Models and all LPS Models

No	Mnemonic	Description	Range			
SCHEME						
1201	PICKSCHEME	Select scheme logic	STEPDST, PUTT, POTT1 POTT2, HYBRID BLOCK			
1202	NUMRCRV	Select number of receivers	0, 1, 2			
1203	TRIPMODE	Single Pole/3 Pole trip mode (Single Pole Model Only)	3POL, 1POL, 1POLZ2			
1204	CARRSTART	Select function to use to start carrier in BLOCKING scheme	DIR, IPB, FD			
1205	WKINFTRIP	Select Weak Infeed tripping for Hybrid scheme	NO, YES			
SCHMTIMERS						
1301	TL1PICKUP	Trip Integrator	1-200	(0101)	1.	ZIDISTANCE 0101-0110
1302	TL4PICKUP	POTT Coord Timer PU	0-50	(0102)	2.	Z2DISTANCE 0201-0210
1303	TL4DROPOUT	POTT Coord Timer DO	0-50	(0103)	3.	Z3DISTANCE 0301-0308
1304	TL5PICKUP	BKR1 b sw Coord Timer PU	0-200	(0106)	4.	Z4DISTANCE 0401-0411
1305	TL5DROPOUT	BKR1 b sw Coord Timer DO	0-200	(0107)	5.	CURSUPVISN 0501-0507
1306	TL6PICKUP	BKR2 b sw Coord Timer PU	0-200	(0108)	6.	OVERCURRENT 0601-0617
1307	TL6DROPOUT	BKR2 b sw Coord Timer DO	0-200	(0109)	7.	VOLTAGE 0701-0714
1308	TL16PICKUP	Weak Infeed Trip Timer	8-99	(0201)	8.	BLKRSCLOS 0801-0810
1309	TL24DRPOUT	GDOC Blocking Timer	30-500	(0202)	9.	LINEPICKUP 0901-0903
1310	TL25DRPOUT	Distance Blocking Timer	30-500	(0204)	10.	REMOTEOPEN 1001-1002
1311	TL26PICKUP	Repeat Delay Timer	0-50	(0205)	11.	LINEOVLDR 1101-1105
LINE INFO						
1401	POSSEQANG	Pos. Seq. Impedance Angle	25-90	(0301)	12.	SCHEME 1201-1205
1402	ZERSEQANG	Zero Seq. Impedance Angle	25-90	(0302)	13.	SCHMTIMERS 1301-1311
1403	ZLINE	Pos. Seq. Line Imp. in sec. ohms	0.01-50.0	(0303)	14.	LINEINFO 1401-1408
1404	ZEROSEQKO	ZO/Z1 ratio	1.0-7.0		15.	SCADA DATA 1501-1502
1405	LINELENGTH	Line Length	0.0-500.0	(0401)	16.	OSBLOCKING 1601-1607
1406	LINEUNIT	Units of Length	miles, km	(0402)	17.	OSTRIPPING 1701-1711
1407	CTRATIO	CT Ratio	1-5000	(0403)	18.	RECLOSER 1801-1820
1408	PTRATIO	PT Ratio	1-7000	(0404)	19.	NONCRIT_AL 1901-1908
SCADA DTA						
1501	FLTLOCK	Hold Time	0-99.9	(0405)	20.	OUTPUTS 2001-2028 (Configurable)
1502	FLTRESET	Fault Location Reset Time	0-999	(0407)		
OS BLOCKING						
1601	MOBZONE	Coordinating Zone	ZON2, ZON3, ZON4	(0501) (0502) (0503)		
1602	MOBCHARANG	MOB characteristic Angle	30-130	(0504)		
1603	BLOCKWHAT	Block during OS	BLKALL, BLKDIST, BLKPHAS, BLKNONE	(0505) (0506) (0507) (0508)		
1604	BLOCKZ1	Block all zone 1 functions	NO, YES			
1605	BLOCKZ2	Block all zone 2 functions	NO, YES			
1606	BLOCKZ3	Block all zone 3 functions	NO, YES			
1607	BLOCKZ4	Block all zone 4 functions	NO, YES			
OS TRIPPING (Out-of-Step Trip Models Only)						
1701	USE_OST	Select OST	NO, YES			
1702	NUMBRCHAR	Select Number of Characteristics	2, 3			
1703	TRIPIN_OUT	Trip Entering or Leaving Inner	IN, OUT			
1704	FWDREACH	OST Forward Reach	0.1-75.0			
1705	REVREACH	OST Reverse Reach	0.1-75.0			
1706	OUTER	Outer Characteristic Angle	40-165			
1707	MIDDLE	Middle Characteristic Angle	40-165			
1708	INNER	Inner Characteristic Angle	40-165			
1709	TLOS1PU	Coordinating Timer 1 Pick-up	1-100			
1710	TLOS1DO	Coordinating Timer 1 Drop-out	1-100			
1711	TLOS2PU	Coordinating Timer 2 Pick-up	1-100			
1712	TLOS3PU	Coordinating Timer 3 Pick-up	1-100			
1713	TLOS4PU	Coordinating Timer 4 Pick-up	1-100			

Index	Description	Mnemonic
116	Instantaneous Phase Overcurrent (50P/PH4)	PH4
117	Instantaneous Ground Overcurrent (50G/IDT)	IDT
118	Ground Time Overcurrent Pick Up	TOCACT
119	Ground Time Overcurrent Trip (51G/TOC)	TOCTRP
120	Out of Step Blocking	OSB
121	Out of Step Trip	OST
122	Configurable Trip Bus Input	CNFTRP
123	Configurable Oscillography Trigger	CNFOSC
124	TL16 Timer Output	TL16
125	TL24 Timer Output	TL24
126	Ground Forward Flag (NT)	GRDFWD
127	Ground Reverse Flag (NB)	GRDREV
128	TL25 Timer Output	TL25
129	Z2 Ground Timer	Z2GTMR
130	Z3 Ground Timer	Z3GTMR
131	Z4 Ground Timer	Z4GTMR
132	Z2 Phase Timer	Z2PTMR
133	Z3 Phase Timer	Z3PTMR
134	Z4 Phase Timer	Z4PTMR
135	Any Trip Bus	TRPBUS
136	Weak Infeed Trip	WITRIP
137	Sync Check	SYNC
138	Number of Breaker Operation Alarm	BRMNOP
139	Breaker Equipment Duty Alarm	BRMNDT
140	Any Phase Over Voltage Pickup	OVRVPU
141	Positive Sequence Over Voltage Pickup	V1TPU
142	Compensated Positive Sequence Over Voltage Pickup	V1CPU
143	II Line Pickup	IILPU
144	Block Reclose Initiate	BLOCKRI
145	Inhibit Reclose Initiate	INH-RI
146	Breaker Close	BKRCLS
147	Trip Circuit #1 Voltage Monitor Status	T1TC
148	Trip Circuit #2 Voltage Monitor Status	T2TC
149	Trip Circuit #3 Voltage Monitor Status	T3TC
150	Trip Circuit #4 Voltage Monitor Status	T4TC
151	Trip Circuit #5 Voltage Monitor Status*	T5TC
152	Trip Circuit #6 Voltage Monitor Status*	T6TC
153	Phase A Overvoltage	AVOVR
154	Phase B Overvoltage	BVOVR
155	Phase C Overvoltage	CVOVR
156	Instantaneous Positive Sequence Overvoltage	V1IOVR
157	Time Delayed Positive Sequence Overvoltage	V1TOVR
158	Instantaneous Compensated Positive Sequence Overvoltage	V1CIOV
159	Time Delayed Compensated Positive Sequence Overvoltage	V1CTOV
160	Any Phase Overvoltage	OVRVLT
161	Programmable Logic Gate # 1 Output	G1
162	Programmable Logic Gate # 2 Output	G2
163	Programmable Logic Gate # 3 Output	G3
164	Programmable Logic Gate # 4 Output	G4
165	Programmable Logic Gate # 5 Output	G5
166	Programmable Logic Gate # 6 Output	G6
167	Programmable Logic Gate # 7 Output	G7
168	Programmable Logic Gate # 8 Output	G8
169	Programmable Logic Gate # 9 Output	G9
170	Programmable Logic Gate # 10 Output	G10
171	Programmable Logic Gate # 11 Output	G11
172	Programmable Logic Gate # 12 Output	G12
173	Programmable Logic Gate # 13 Output	G13
174	Programmable Logic Gate # 14 Output	G14

No	Mnemonic	Description	Range
205	PROTOCOL2	Comm Port #2 Protocol (One Rear Port Model)	GE-MODEM ASCII
206	PROTOCOL3	Comm Port #3 Protocol (Two Rear Port Model)	GE-MODEM ASCII

OSC GRAPHY

301	NUMFAULTS	Number of fault records (with standard memory)	2,4,8,12
301	NUMFAULTS	Number of fault records (with expanded memory)	6,12,24,36
302	PREFAULT	Number of pre-fault cycles	1-8
303	SPLITREC	Splits fault record and captures this % at end, with (1-SPLITREC) captured at beginning	0-100

BRKR DUTY

401	EXPONENT	Exponent in I ^t calculation	1.0-2.0
402	MAX_OP	Max.No. of Breaker Operations for a breaker	0000-9999
403	MAX_IXT	Max. Breaker Duty for a breaker	0-9999999
404	IXTPHASEA	Accumulated Breaker Duty Ph.A	0-9999999
405	IXTPHASEB	Accumulated Breaker Duty Ph.B	0-9999999
406	IXTPHASEC	Accumulated Breaker Duty Ph.C	0-9999999
407	NUM_OP	Present No. of Breaker Oper. (3 Pole Tripping Model Only)	0000-9999
407	NUM_OP_A	Present No. of Breaker Oper. for Ph.A (ALPS Single Pole Tripping Model Only)	0000-9999
408	NUM_OP_B	Present No. of Breaker Oper. for Ph.B (ALPS Single Pole Tripping Model Only)	0000-9999
409	NUM_OP_C	Present No. of Breaker Oper. for Ph.C (ALPS Single Pole Tripping Model Only)	0000-9999

INPUTS

501	CC1	CONTACT CONVERTER 1	0-32**
502	CC2	CONTACT CONVERTER 2	0-32**
503	CC3	CONTACT CONVERTER 3	0-32**
504	CC4	CONTACT CONVERTER 4	0-32**
505	CC5	CONTACT CONVERTER 5	0-32**
506	CC6	CONTACT CONVERTER 6	0-32**
507	CC7	CONTACT CONVERTER 7	0-32**
508	CC8	CONTACT CONVERTER 8	0-32**
509	CC9*	CONTACT CONVERTER 9	0-32**
510	CC10*	CONTACT CONVERTER 10	0-32**
511	CC11*	CONTACT CONVERTER 11	0-32**
512	CC12*	CONTACT CONVERTER 12	0-32**

* ALPS Single Pole Tripping Models and all LPS Models

**Contact Converter output normally appears as a Logic 1 with normally open contact connected, to invert output to Logic 0, add 1000 to number.

Refer to Instruction Book
 GEK-105555 (ALPS 3 Pole)
 GEK-105556 (ALPS Single Pole)
 GEK-106159 (LPS 3 Pole)
 GEK-106202 (LPS Single Pole)
 for complete information

No	Mnemonic	Description	Range
OUTPUTS			
2001	T1	T1 Contact	0-256**
2002	T2	T2 Contact	0-256**
2003	T3	T3 Contact	0-256**
2004	T4	T4 Contact	0-256**
2005	T5*	T5 Contact	0-256**
2006	T6*	T6 Contact	0-256**
2007	A1	A1 Contact	0-256**
2008	A2	A2 Contact	0-256**
2009	A3	A3 Contact	0-256**
2010	A4	A4 Contact	0-256**
2011	A5	A5 Contact	0-256**
2012	A6	A6 Contact	0-256**
2013	A7	A7 Contact	0-256**
2014	A8	A8 Contact	0-256**
2015	A9*	A9 Contact	0-256**
2016	A10*	A10 Contact	0-256**
2017	A11*	A11 Contact	0-256**
2018	A12*	A12 Contact	0-256**
2019	C1	C1 Contact	0-256**
2020	C2	C2 Contact	0-256**
2021	KT1	KT1 Contact	0-256**
2022	KT2	KT2 Contact	0-256**
2023	KT3	KT3 Contact	0-256**
2024	KT4	KT4 Contact	0-256**
2025	CONFTRIP	Initiate 3 Pole trip with input from <i>Xpression Builder</i>	0-256
2026	CONFOSC	Initiate oscillography capture with input from <i>Xpression Builder</i>	0-256

* ALPS Single Pole Tripping Models and all LPS Models

**Contacts are configurable, and are normally open; add 1000 to number to close contact under conditions

GENERAL SETTINGS

CONFIGURE

101	UNITID	Unit ID	0000-9999
102	SYSFREQ	System Frequency	50,60
103	PHASROTATE	Phase Rotation	ABC,ACB
104	TIMESYNCH	Time Synch Source	INT,IRIG-B
105	NUM_BKR	Number of Breakers	1,2
106	NUM_TC	Number of trip circuits	1-2
107	NUM_MON	No. of trip Circuit Monitors	abcd
108	DISPLAYVAL	Value Display Mode	PRI,SEC
109	LANGUAGE	Language Option	ENGLISH, SPANISH

COMMPORTS

201	COMPORT1	Comm Port #1 Settings	Baud Rate: Parity Stop Bits xxyz
202	COMPORT2	Comm Port #2 Settings	Interface Baud Rate: Parity Stop Bits ixxyz
203	COMPORT3	Comm Port #3 Settings	Interface Baud Rate: Parity Stop Bits ixxyz
204	PROTOCOL1	Comm Port Protocol	GE-MODEM ASCII

Index	Description	Mnemonic
175	Programmable Logic Gate # 15 Output	G15
176	Programmable Logic Gate # 16 Output	G16
177	Programmable Logic Gate # 17 Output	G17
178	Programmable Logic Gate # 18 Output	G18
179	Programmable Logic Gate # 19 Output	G19
180	Programmable Logic Gate # 20 Output	G20
181	Programmable Logic Gate # 21 Output	G21
182	Programmable Logic Gate # 22 Output	G22
183	Programmable Logic Gate # 23 Output	G23
184	Programmable Logic Gate # 24 Output	G24
185	Programmable Logic Gate # 25 Output	G25
186	Programmable Logic Gate # 26 Output	G26
187	Programmable Logic Gate # 27 Output	G27
188	Programmable Logic Gate # 28 Output	G28
189	Programmable Logic Gate # 29 Output	G29
190	Programmable Logic Gate # 30 Output	G30
191	Programmable Logic Gate # 31 Output	G31
192	Programmable Logic Gate # 32 Output	G32
193	Programmable Logic Gate # 33 Output	G33
194	Programmable Logic Gate # 34 Output	G34
195	Programmable Logic Gate # 35 Output	G35
196	Programmable Logic Gate # 36 Output	G36
197	Programmable Logic Gate # 37 Output	G37
198	Programmable Logic Gate # 38 Output	G38
199	Programmable Logic Gate # 39 Output	G39
200	Programmable Logic Gate # 40 Output	G40
201-224	Spare	
225	Programmable Logic Timer 1 Output	TM1
226	Programmable Logic Timer 1 Reset	TM1RST
227	Programmable Logic Timer 2 Output	TM2
228	Programmable Logic Timer 2 Reset	TM2RST
229	Programmable Logic Timer 3 Output	TM3
230	Programmable Logic Timer 3 Reset	TM3RST
231	Programmable Logic Timer 4 Output	TM4
232	Programmable Logic Timer 4 Reset	TM4RST
233	Programmable Logic Timer 5 Output	TM5
234	Programmable Logic Timer 5 Reset	TM5RST
235	Programmable Logic Timer 6 Output	TM6
236	Programmable Logic Timer 6 Reset	TM6RST
237	Programmable Logic Timer 7 Output	TM7
238	Programmable Logic Timer 7 Reset	TM7RST
239	Programmable Logic Timer 8 Output	TM8
240	Programmable Logic Timer 8 Reset	TM8RST
241	Programmable Logic Counter 1	CNTR1
242	Programmable Logic Counter 2	CNTR2
243	Programmable Logic Counter 3	CNTR3
244	Programmable Logic Counter 4	CNTR4
245	Programmable Logic Counter 5	CNTR5
246	Programmable Logic Counter 6	CNTR6
247	Programmable Logic Counter 7	CNTR7
248	Programmable Logic Counter 8	CNTR8
249	Programmable Logic Latch 1	LATCH1
250	Programmable Logic Latch 2	LATCH2
251	Programmable Logic Latch 3	LATCH3
252	Programmable Logic Latch 4	LATCH4
253	Programmable Logic Latch 5	LATCH5
254	Programmable Logic Latch 6	LATCH6
255	Programmable Logic Latch 7	LATCH7
256	Programmable Logic Latch 8	LATCH8

Flag Index

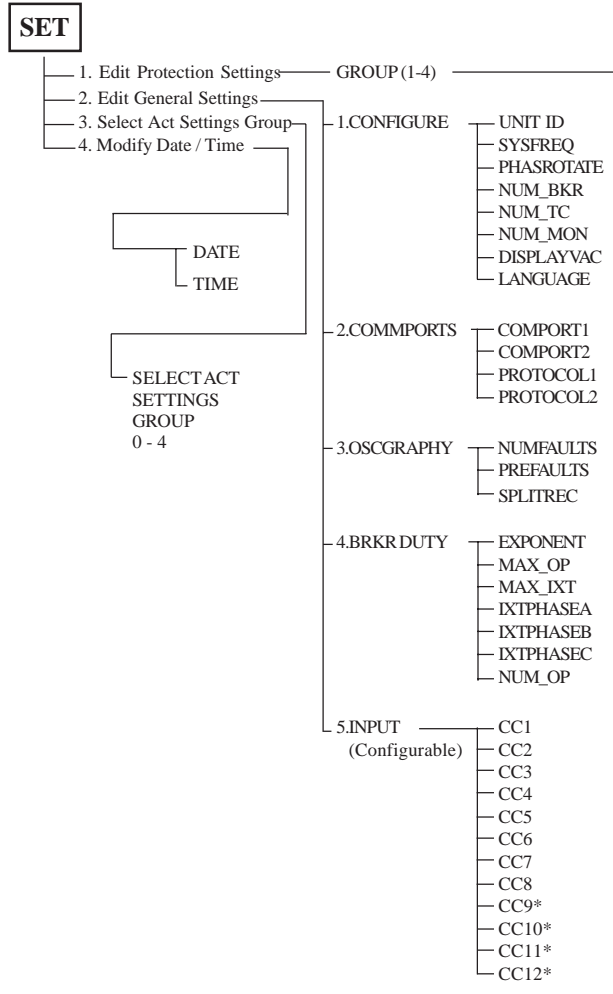
Index	Description	Mnemonic
1	Breaker #1 52b Contact Input (Phase A)*	52B_1 (A)
2	Breaker #1 52b Contact Input Phase B	52B_1B
3	Breaker #1 52b Contact Input Phase C	52B_1C
4	Breaker #2 52b Contact Input (Phase A)*	52B_2 (A)
5	Breaker #2 52b Contact Input Phase B	52B_2B
6	Breaker #2 52b Contact Input Phase C	52B_2C
7	Enable 3 Pole Tripping	EXTRP3P
8	Change Setting Group Input (BIT0)	CGST1
9	Change Setting Group Input (BIT1)	CGST2
10	External Contact Input to Stop Carrier*	STCR
11	External Contact Input to Block Pilot Tripping*	BPLTRP
12	Receiver 1 Input	RCVR1
13	Receiver 2 Input	RCVR2
14	External Reclose Initiate Single Pole	EXRI1P
15	External Reclose Initiate 3 Pole	EXRI3P
16	External Reclose Inhibit	EXRINH
17	External Reclose Cancel	EXRCNL
18	Reclose Reset	RCLRST
19	Enable 3 Pole Reclose	CLOS3P
20	External Contact Input to Reset ALPS Trip Target Display	RESET
21	External Contact Input to Disable Protection	DISPRT
22	External Contact Input to Disable Outputs	DISOUT
23	External Contact Input to Trigger Oscillography Capture	OSCTRG
24	Manual Lock-out	MANLKT
25	Configurable Input 1	CNFDI1
26	Configurable Input 2	CNFDI2
27	Configurable Input 3	CNFDI3
28	Configurable Input 4	CNFDI4
29	Configurable Input 5	CNFDI5
30	Configurable Input 6	CNFDI6
31	Configurable Input 7	CNFDI7
32	Configurable Input 8	CNFDI8
33	Trip Bus (Phase A)*	TRIP (A)
34	Trip Bus Phase B	TRIP B
35	Trip Bus Phase C	TRIP C
36	1P Reclose Initiate	RI-1P
37	3P Reclose Initiate	RI-3P
38	Reclose Cancel Output from Scheme Logic	CANCL
39	Key XMTR1/CARR Start Output from Scheme Logic	KEY1
40	Key XMTR2/CARR Stop Output from Scheme Logic	KEY2
41	3P Trip Enable*	TRIP3P
42	Spare	
43	Spare	
44	Reclose in Progress	RIP
45	Line Over Load Alarm Output	LNOVLD
46	Critical Alarm Output	CRTALM
47	Recloser Lockout	LORCL
48	Trip Circuit Alarm	TCMALM
49	Zone Flags on Alarm	ZNALM
50	Overcurrent Alarm	OVRALM
51	Unbalanced Current Detector Alarm Output	UNBAL
52	Non-Critical Alarm Output	NCALM
53	Spare	
54	Spare	
55	Spare	
56	Manual Open BRK1	MNOPN1
57	Manual Open BRK2	MNOPN2

Index 1-32 are Contact Converter Assignments

*Single Pole Tripping Models Only

Index	Description	Mnemonic
58	Manual Close BRK1	MNCLS1
59	Manual Close BRK2	MNCLS2
60	Fault ID: Phase A Involved	DAFLTA
61	Fault ID: Phase B Involved	DAFLTB
62	Fault ID: Phase C Involved	DAFLTC
63	Fault ID: Neutral Involved	DAFLTN
64	DMA Overrun	DMAOVR
65	Zone 1 AB Distance Function	Z1AB
66	Zone 1 BC Distance Function	Z1BC
67	Zone 1 CA Distance Function	Z1CA
68	Zone 2 AB Distance Function	Z2AB
69	Zone 2 BC Distance Function	Z2BC
70	Zone 2 CA Distance Function	Z2CA
71	Zone 3 AB Distance Function	Z3AB
72	Zone 3 BC Distance Function	Z3BC
73	Zone 3 CA Distance Function	Z3CA
74	Zone 4 AB Distance Function	Z4AB
75	Zone 4 BC Distance Function	Z4BC
76	Zone 4 CA Distance Function	Z4CA
77	Any Z1 Phase Distance Function	Z1PH
78	Any Z2 Phase Distance Function	Z2PH
79	Any Z3 Phase Distance Function	Z3PH
80	Any Z4 Phase Distance Function	Z4PH
81	Zone 1 AG Distance Function	Z1AG
82	Zone 1 BG Distance Function	Z1BG
83	Zone 1 CG Distance Function	Z1CG
84	Zone 2 AG Distance Function	Z2AG
85	Zone 2 BG Distance Function	Z2BG
86	Zone 2 CG Distance Function	Z2CG
87	Zone 3 AG Distance Function	Z3AG
88	Zone 3 BG Distance Function	Z3BG
89	Zone 3 CG Distance Function	Z3CG
90	Zone 4 AG Distance Function	Z4AG
91	Zone 4 BG Distance Function	Z4BG
92	Zone 4 CG Distance Function	Z4CG
93	Any Z1 Ground Distance Function	Z1GRD
94	Any Z2 Ground Distance Function	Z2GRD
95	Any Z3 Ground Distance Function	Z3GRD
96	Any Z4 Ground Distance Function	Z4GRD
97	Not Used in Three Pole Tripping	
98	Not Used in Three Pole Tripping	
99	Not Used in Three Pole Tripping	
100	All Phases Open	3OPEN
101	Any Phase Open	ANYOPN
102	Not Used in Three Phase Tripping	
103	Any Phase Undervoltage	ANYUVT
104	All Voltages High (No Phase Undervoltage)	ALLVLT_
105	Fault Detector (FD)	FLTDET
106	TL1 Timer Output	TL1
107	IT Detector	IT
108	IB Detector	IB
109	IPT Detector	IPT
110	IPB Detector	IPB
111	Remote Breaker Open Detector	REMOPN
112	Ground Directional Trip (NT · IPT)	GRDTRP
113	Ground Directional Block (NB · IPB)	GRDBLK
114	Line Pickup	LPU
115	Fuse Failure Alarm	FF

SET KEYPAD MENU



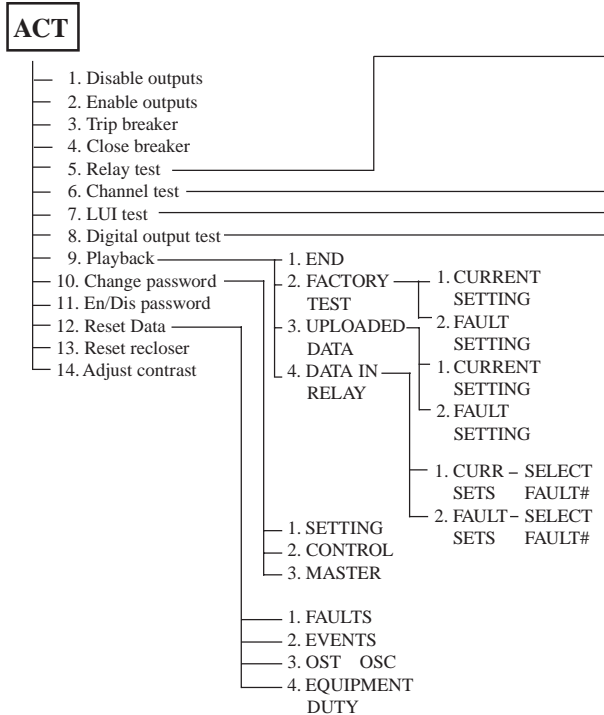
*Single Pole Tripping Models and all LPS Models

No	Mnemonic	Description	Range
RECLOSER (Optional)			
1801	RECLMODE	Select Reclosing Option	OFF, NONE, INTERNAL, EXTERNAL, 1 Pole, 3 Pole, 1 Pole/3 Pole
1802	RECTYPE*	Select Reclosing Type	1 Pole, 3 Pole, 1 Pole/3 Pole
1803	NUM1P*	No. of attempts following 1P Trip	1-4
1804	1PDELAY1*	Single Pole First Delay	0.1-300 Sec
1805	1PDELAY2*	Single Pole Second Delay	0.1-300 Sec
1806	1PDELAY3*	Single Pole Third Delay	0.1-300 Sec
1807	1PDELAY4*	Single Pole Fourth Delay	0.1-300 Sec
1808	NUM3P	No. of attempts following 3P Trip	1-4
1809	3PDELAY1	3 Pole First Delay	0.1-300 Sec
1810	3PDELAY2	3 Pole Second Delay	0.1-300 Sec
1811	3PDELAY3	3 Pole Third Delay	0.1-300 Sec
1812	3PDELAY4	3 Pole Fourth Delay	0.1-300 Sec
1813	RESETTIME	Reset Time	0.1-300 Sec
1814	DWELLTIME	Contact Dwell Time	0.1-2 Sec
1815	HOLD	Inhibit Hold Select	YES, NO
1816	HOLDTIME	Inhibit Hold Time	1-1000 Sec
1817	HOLDSENSE	Contact Input Status	CC, CO
1818	SYNCCHECK**	Synch Check Supervision	YES, NO
1819	CLOSEANG**	Closing Angle	0-75 degrees
1820	SLIPFREQ**	Slip Frequency	0.1-5Hz
1821	BUSLINE**	Bus or Line Voltage	BUS, LINE
1822	SYNCPHASE**	Voltage used by SYNCCHECK	VA, VB, VC, VAB,VBC,VCA
1823	SYNHOLD**	SYNCCHECK Hold Time	1-100 Sec
1824	SP1PDELAY2**	Supervise 2 nd 3P Reclose after 1P trip (Single Pole Model Only)	YES, NO
1825	SP1PDELAY3**	Supervise 3 rd 3P Reclose after 1P trip (Single Pole Model Only)	YES, NO
1826	SP1PDELAY4**	Supervise 4 th 3P Reclose after 1P trip (Single Pole Model Only)	YES, NO
1827	SP3PDELAY1**	Supervise 1 st 3P Reclose after 3P trip	YES, NO
1828	SP3PDELAY2**	Supervise 2 nd 3P Reclose after 3P trip	YES, NO
1829	SP3PDELAY3**	Supervise 3 rd 3P Reclose after 3P trip	YES, NO
1830	SP3PDELAY4**	Supervise 4 th 3P Reclose after 3P trip	YES, NO
1831	SYNCMANCLS**	Supervise Manual Close	YES, NO
1832	VBUSLIVE**	Live Bus Voltage	0.1-130V
1833	VBUSDEAD**	Dead Bus Voltage	0.1-130V
1834	VLINELIVE**	Live Line Voltage	0.1-130V
1835	VLINEDEAD**	Dead Line Voltage	0.1-130V
1836	LBUSDLIVE**	Live Bus Dead Line	YES, NO
1837	DBUSLLINE**	Dead Bus Live Line	YES, NO
1838	DBUSDLIVE**	Dead Bus Dead Line	YES, NO
1839	DELTA V**	Voltage Difference	0.1-30V
1840	DELTA VBLK**	Block Synch Check by DELTA V	YES, NO

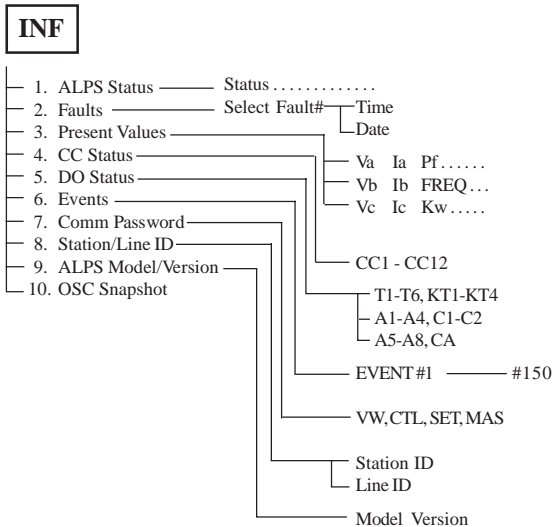
*Single Pole Tripping Models Only
 **Sync-Check Models Only

NONCRIT-AL			
1901	NCAIN1	Non-Critical Alarm Input #1	0-256 depending on the choice of input assignment
1902	NCAIN2	Non-Critical Alarm Input #2	0-256
1903	NCAIN3	Non-Critical Alarm Input #3	0-256
1904	NCAIN4	Non-Critical Alarm Input #4	0-256
1905	NCAIN5	Non-Critical Alarm Input #5	0-256
1906	NCAIN6	Non-Critical Alarm Input #6	0-256
1907	NCAIN7	Non-Critical Alarm Input #7	0-256
1908	NCAIN8	Non-Critical Alarm Input #8	0-256

ACT KEYPAD MENU



INF KEYPAD MENU



No	Mnemonic	Description	Range
606	50G_DIRCNL	Directional Control of 50G	NO, YES
607	50GPICKUP	50G Pickup Setting	0.5-80.0
608	50GPICKUPFF	50G Pickup during fuse failure	0.5-80.0
609	50GRESTNT	50G Restraint Setting	0.0, 0.3
610	51G	Ground Time Overcurrent	NO, YES
611	51_DIRCNL	Directional Control 51G	NO, YES
612	51PICKUP	51G Pickup Setting	0.20-15.0
613	51PICKUPFF	51G Pickup during fuse failure	0.20-15.0
614	51GCURVE	51G Curve	INV, V-INV, E-INV, CSTM, DEF

615	51GTIMDIAL	51G Time Dial	0.5-10.0
616	DEFTIMDELY	Definite Time Delay	0.5-30.0
617	51G_RESET	51G Reset Characteristic	FAST, EM

VOLTAGE

701	RATEDVOLTS	Rated Voltage	100,105,110, 115, 120
702	PHASEOVER	Select Phase Overvoltage	NO, YES
703	PHOVPIKUP	Phase Overvoltage Pickup	0.0-1.4
704	PHOVTMDLY	Phase Overvoltage Time Delay	0.0-10.0
705	V1OVER	Select Pos. Seq. Overvoltage (Overvoltage Model Only)	NO, YES
706	V1OVINSTPU	Inst. Pos. Seq. Overvoltage Pickup (Overvoltage Model Only)	1.0-1.4
707	V1OVTIMPU	TOV Pos. Seq. OV Pickup (Overvoltage Model Only)	1.0-1.4
708	V1OVTIMDLY	Pos. Seq. OV Time Delay (Overvoltage Model Only)	0.0-10.0
709	V1COMP	Compensated Pos. Seq. OV (Overvoltage Model Only)	NO, YES
710	V1COMPRCH	Comp. Pos. Seq. OV Impedance (Overvoltage Model Only)	0.01-50.0
711	V1COMPINPU	INST Comp. Pos. Seq. OV Pickup (Overvoltage Model Only)	1.0-1.4
712	V1COMPTDPU	TOVComp. Pos. Seq. OV Pickup (Overvoltage Model Only)	1.0-1.4
713	V1COMPTDLY	Comp. Pos. Seq. OV Time Delay (Overvoltage Model Only)	0.0-10.0
714	FUSEFAIL	Potential Fuse Failure Blocking	NO, YES

BLK RECLOS

801	ALL_BELOW	Block reclosing for any function	NO, YES
802	OUTOFSTEP	Block for Out of Step	NO, YES
803	ALL_3_Z2PH	Block for 3 Pole faults	NO, YES
804	50G_BLOCK	Block for 50G trip	NO, YES
805	Z2TIMETRIP	Block for Z2 Time Delayed Trip	NO, YES
806	Z3TIMETRIP	Block for Z3 Time Delayed Trip	NO, YES
807	Z4TIMETRIP	Block for Z4 Time Delayed Trip	NO, YES
808	Z1PHASTRIP	Block for any Z1 phase fault	NO, YES
809	ANYZ2PHASE	Block for any Z2 phase fault	NO, YES
810	CONFSTRIP	Block for Configurable triplogic	NO, YES

LINEPICKUP

901	LINEPICKUP	Select Line Pickup	NO, YES
902	BYPASSTL3	Bypass Line pickup time delay	NO, YES
903	I1PICKUP	I1 pickup	1.0-15.0

REMOTEOPEN (Not useable in Single Pole Systems)

1001	REMOTEOPEN	Select remote open detector	NO, YES
1002	TL20PICKUP	Remote open detector time delay	10-100

LINE OVRD

1101	LINEOVERLD	Select line overload protection	NO, YES
1102	LEVEL1PU	Level 1 pickup current	2.5-20.0
1103	LEVEL2PU	Level 2 pickup current	5.0-40.0
1104	LEVEL1TDLY	Level 1 time delay	10-200
1105	LEVEL2TDLY	Level 2 time delay	10-99