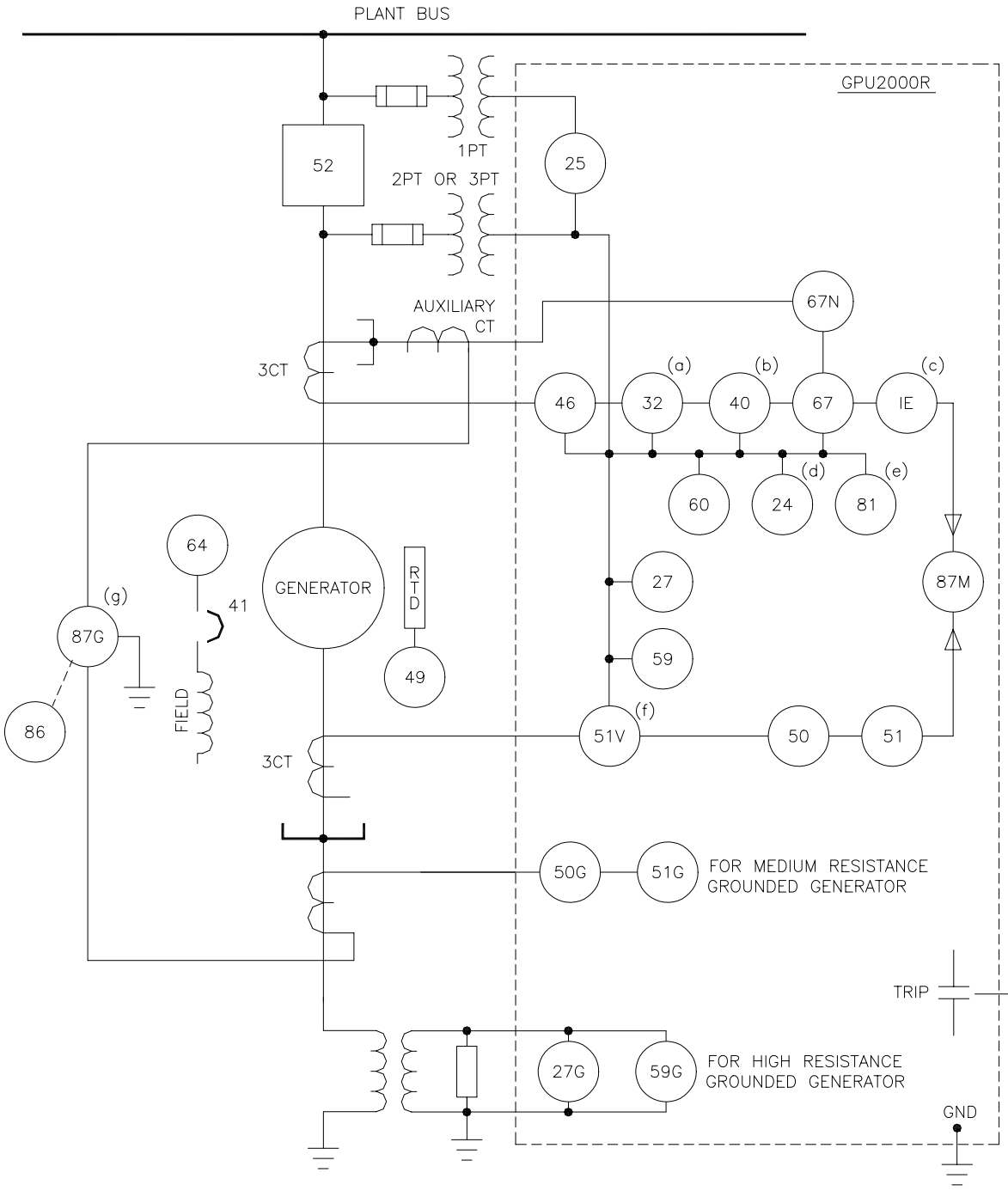


ANSI DEVICE NUMBER		ABB DEVICE NUMBER	ABB CATALOG NUMBER *
	THE TYPE **GPU2000R** DIGITAL GENERATOR PROTECTION UNIT INCLUDES THE FOLLOWING		
24	VOLTS PER HERTZ	24	589VXXXX–XXXXX*
25	SYNC. CHECK	25	(INCLUDED)
27	UNDERVOLTAGE	27P/G	(INCLUDED)
32	REVERSE POWER	32R/O/U	(INCLUDED)
40	LOSS OF EXCITATION	40	(INCLUDED)
46	CURRENT UNBALANCE	46	(INCLUDED)
50	INSTANTANEOUS O/C	50P/G/IE	(INCLUDED)
51	TIME OVERCURRENT	51P/G	(INCLUDED)
51V	VOLTAGE RESTRAINT O/C	51V	(INCLUDED)
59	OVERVOLTAGE	59P/G	(INCLUDED)
60	BLOWN FUSE PROTECTION	60	(INCLUDED)
67	DIRECTIONAL O/C	67P/N	(INCLUDED)
81	UNDER/OVER FREQUENCY	81O/U	(INCLUDED)
87	MACHINE DIFFERENTIAL	87M	(INCLUDED)
49	OVER TEMPERATURE	49T (EXTERNAL)	436xx065*
64	FIELD GROUND	64F (EXTERNAL)	430F0261
87G	GROUND DIFFERENTIAL	32D (EXTERNAL)	425x0xx6*

* REPLACE THE "X" IN CATALOG NUMBERS WITH SELECTED DIGIT PER SYSTEM REQUIREMENTS.

ALL **ABB** TYPE RELAYS LISTED ARE NUMERIC OR ANALOG SOLID STATE.

ELEMENTS OF THE **GPU2000R** UNIT NOT REQUIRED FOR THE PROTECTION APPLICATION MAY BE EASILY DISABLED IN THE SETTINGS PROGRAM.

OTHER DEVICES

41 FIELD BREAKER
52 CIRCUIT BREAKER
86 HAND RESET LOCKOUT RELAY

NOTES

a. 32R, 32O, 32U.
b. 2 ZONES, 40–T, 40–A.
c. INADVERTENT ENERGIZATION, A COMBINATION OF 50 & 81.
d. 2 LEVELS, 24–1, 24–2.
e. 2 LEVELS OF 81O AND 81U.
f. VOLTAGE CONTROLLED OR RESTRAINED.
g. 87G WOULD BE APPLICABLE TO MEDIUM RESISTANCE GROUNDED GENERATOR.

GPU2000R SINGLE LINE DIAGRAM (TYPICAL)

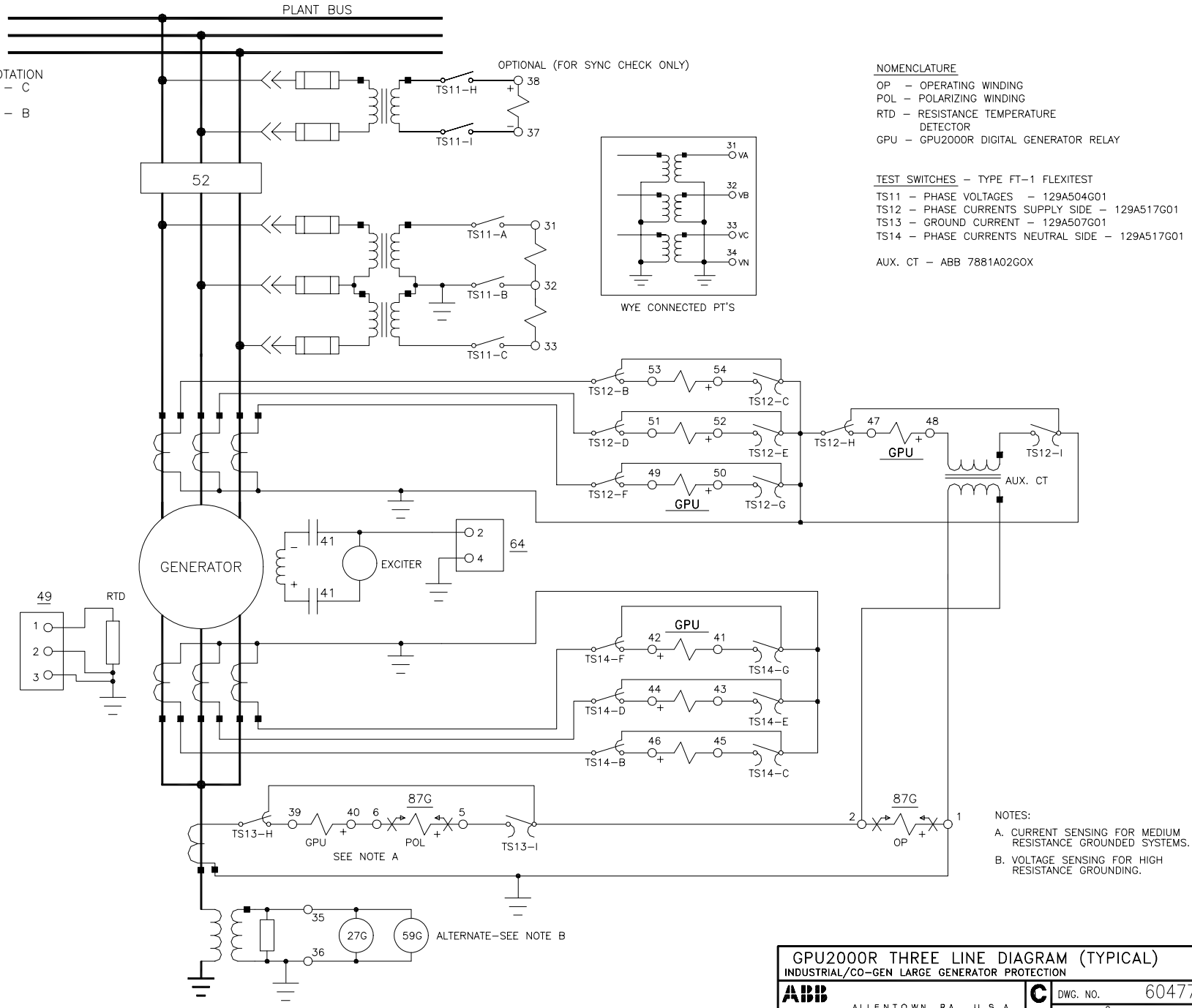
INDUSTRIAL/CO-GEN LARGE GENERATOR PROTECTION

ABB ALLENTOWN, PA., U.S.A. | SIZE C | DWG. NO. 604777 | REV 0 | SHT. 1 OF 3

BY A. HARRIS DATE 12-20-99 | CHD. DATE | APP. DATE | MICRO. | E.R.# AT991536

CAD. LOC. 60477700.DWG

NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #	NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #



GPU2000R THREE LINE DIAGRAM (TYPICAL)

INDUSTRIAL/CO-GEN LARGE GENERATOR PROTECTION

ABB ALLENTOWN, PA., U.S.A.

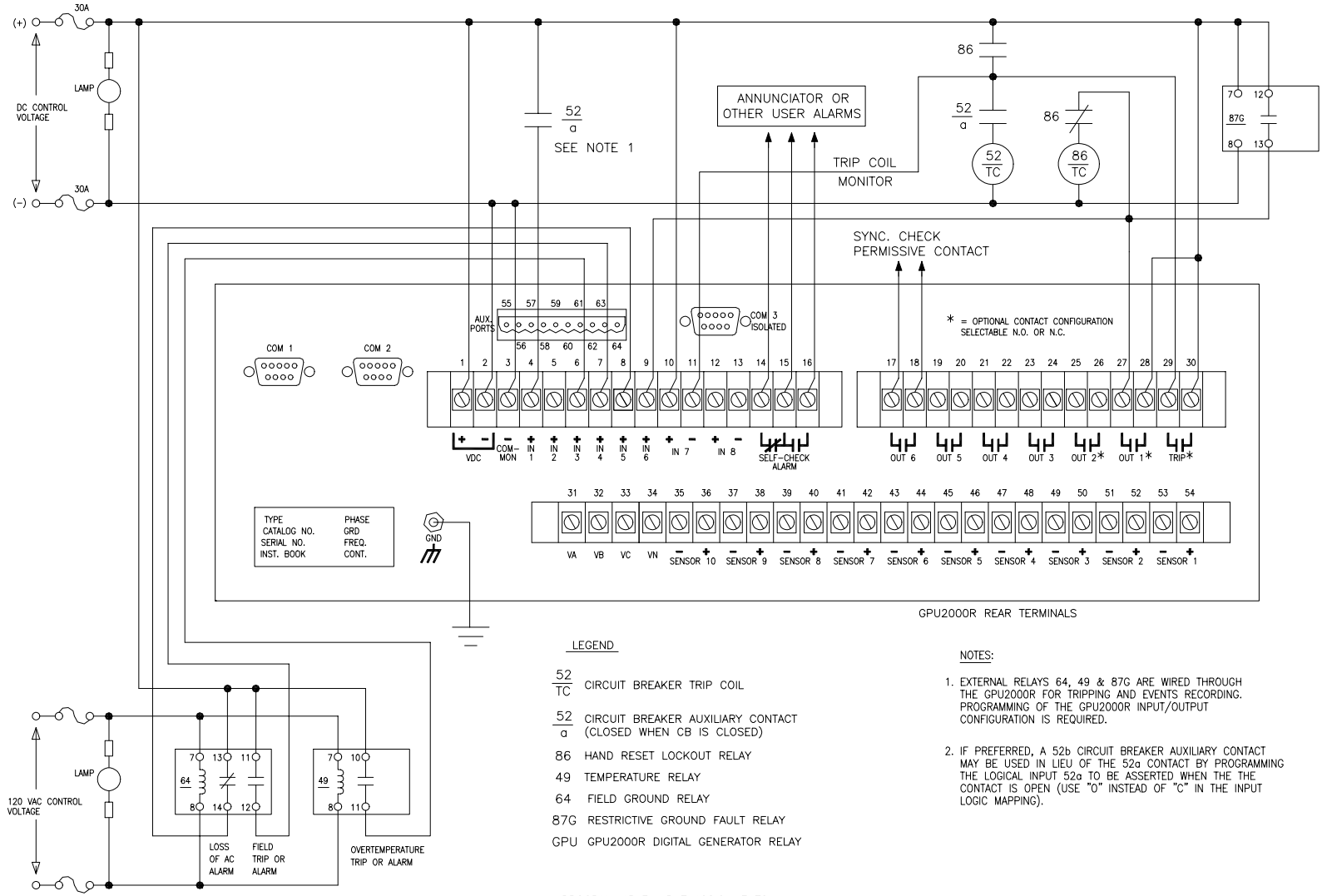
SIZE	DWG. NO.	REV
C	604777	0

SHT. 2 OF 3

BY	CHD.	APP.	MICRO.
A. HARRIS			E.R.# AT991536
DATE 12-20-99	DATE	DATE	

CAD. LOC. 60477700.DWG

NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #	NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #



LEGEND

52/TC	CIRCUIT BREAKER TRIP COIL
52/a	CIRCUIT BREAKER AUXILIARY CONTACT (CLOSED WHEN CB IS CLOSED)
86	HAND RESET LOCKOUT RELAY
49	TEMPERATURE RELAY
64	FIELD GROUND RELAY
87G	RESTRICTIVE GROUND FAULT RELAY
GPU	GPU2000R DIGITAL GENERATOR RELAY

PROGRAMMABLE INPUT ASSIGNMENTS

IN 1	52a
IN 3	ULI3
IN 4	64F
IN 5	ULI5
IN 6	ULI6
IN 7	TCM

NOTES:

1. EXTERNAL RELAYS 64, 49 & 87G ARE WIRED THROUGH THE GPU2000R FOR TRIPPING AND EVENTS RECORDING. PROGRAMMING OF THE GPU2000R INPUT/OUTPUT CONFIGURATION IS REQUIRED.
2. IF PREFERRED, A 52b CIRCUIT BREAKER AUXILIARY CONTACT MAY BE USED IN LIEU OF THE 52a CONTACT BY PROGRAMMING THE LOGICAL INPUT 52a TO BE ASSERTED WHEN THE THE CONTACT IS OPEN (USE "0" INSTEAD OF "C" IN THE INPUT LOGIC MAPPING).

GPU2000R BASIC CONTROL CONNECTIONS (TYP)

INDUSTRIAL/CO-GEN LARGE GENERATOR PROTECTION

ABB ALLENTOWN, PA., U.S.A.

C SIZE	DWG. NO. 604777	SHT. 3 OF 3	0 REV
BY A. HARRIS	CHD.	APP.	MICRO.
DATE 12-20-99	DATE	DATE	E.R.# AT991536
CAD. LOC. 60477700.DWG			

NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #	NO.	REVISIONS	BY & DATE	ENGINEER RELEASE #