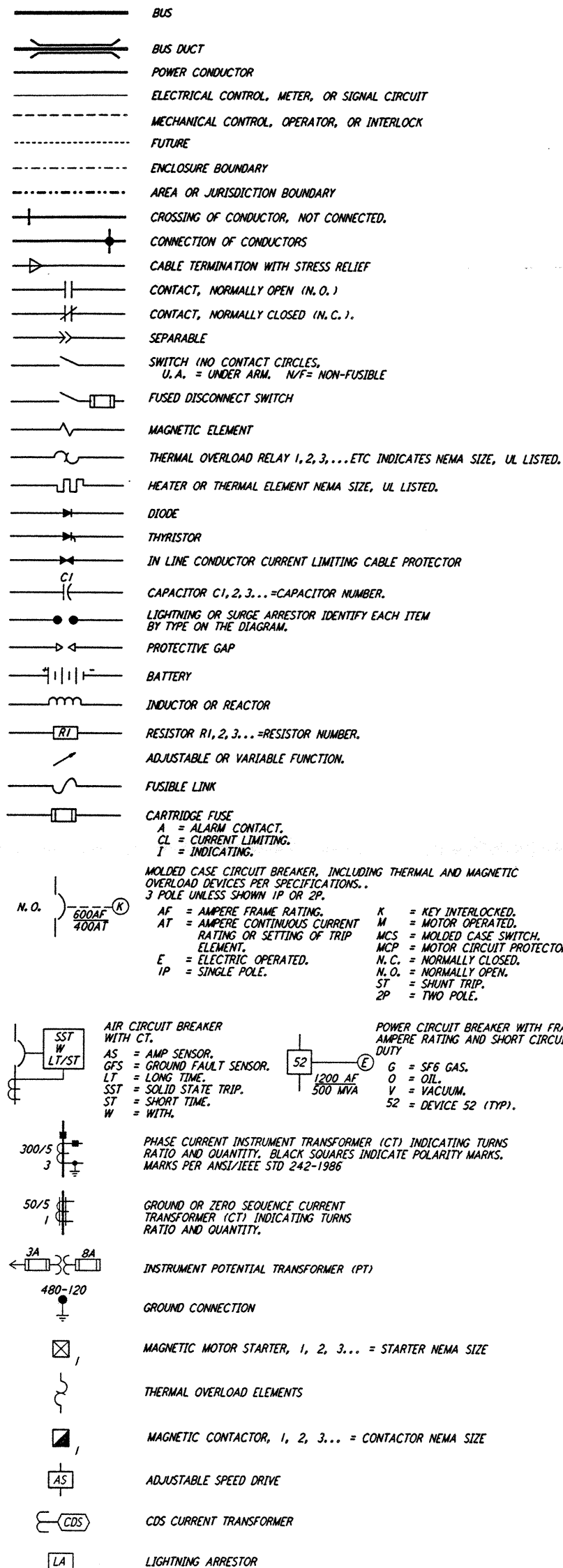
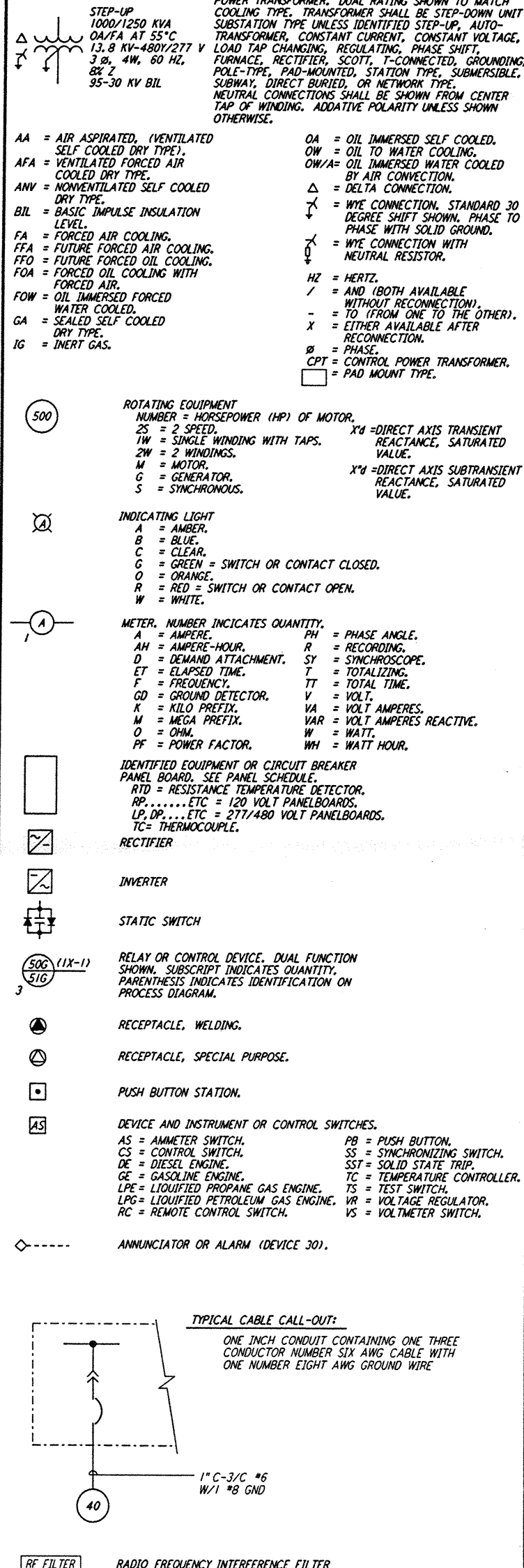


ONE AND THREE LINE DIAGRAM SYMBOLS



ONE AND THREE LINE DIAGRAM SYMBOLS



DEVICE FUNCTION NUMBERS

- 1. MASTER ELEMENT OR INITIATING DEVICE SUCH AS FLOAT SWITCH.
- 2. TIME DELAY STARTING OR CLOSING RELAY.
- 3. CHECKING OR INTERLOCKING RELAY. (AND GATE).
- 4. MASTER CONTACTOR.
- 5. STOPPING DEVICE.
- 6. STARTING CIRCUIT BREAKER.
- 7. ARREST CIRCUIT BREAKER.
- 8. CONTACTOR DISCONNECTING DEVICE.
- 9. REVERSING DEVICE.
- 10. UNIT SEQUENCE SWITCH.
- 11. THREE OR MORE FUNCTIONS PER LEGEND.
- 12. OVER SPEED DEVICE.
- 13. SYNCHRONOUS SPEED DEVICE.
- 14. UNDER SPEED DEVICE.
- 15. SPEED OR FREQUENCY MATCHING DEVICE.
- 16. RESERVED FOR FUTURE APPLICATION.
- 17. SKIPPING OR DISCHARGE SWITCH.
- 18. ACCELERATING OR DECELERATING DEVICE.
- 19. STARTING TO RUNNING TRANSITION DEVICE.
- 20. ELECTRICALLY OPERATED VALVE.
- 21. DISTANCE RELAY. (IMPEDANCE CHANGE DETECTOR).
- 22. EQUALIZER CIRCUIT BREAKER.
- 23. TEMPERATURE CONTROL DEVICE. (SPACE HEATER THERMOSTAT).
- 24. VOLTS PER HERTZ RATIO RELAY.
- 25. SYNCHRONIZING OR SYNCHRONISM CHECK DEVICE.
- 26. ASYNCHRONOUS THERMAL DEVICE. (FIELD OR COOLANT OVERTEMPERATURE).
- 27. UNDERVOLTAGE RELAY.
- 28. FLAME DETECTOR.
- 29. PHASE CONTACTOR.
- 30. ANNUNCIATOR RELAY.
- 31. SEPARATE EXCITATION DEVICE.
- 32. DIRECTIONAL POWER RELAY. (ANTI MOTORING).
- 33. POSITION INDICATOR SWITCH. (CELL SWITCH).
- 34. MASTER SEQUENCE DEVICE.
- 35. BRUSH OPERATING OR SLIP RING SHORT CIRCUITING DEVICE.
- 36. POLARITY OR PHASING VOLTAGE DEVICE.
- 37. UNDERCURRENT OR UNDERPOWER DEVICE (GROUND CONTINUITY MONITOR).
- 38. BEARING PROTECTIVE DEVICE.
- 39. MECHANICAL CONDITION (VIBRATION ETC.) MONITOR.
- 40. FIELD RELAY. (EXCITATION LOSS).
- 41. FIELD CIRCUIT BREAKER.
- 42. RUNNING CIRCUIT BREAKER.
- 43. CONTROL CIRCUIT MANUAL TRANSFER OR SELECTOR DEVICE.
- 44. UNIT SEQUENCE STARTING RELAY.
- 45. ATMOSPHERIC CONDITION MONITOR.
- 46. REVERSE PHASE OR PHASE BALANCE CURRENT RELAY.
- 47. PHASE SEQUENCE VOLTAGE RELAY.
- 48. INCOMPLETE SEQUENCE RELAY.
- 49. MACHINE OR TRANSFORMER (ARMATURE OR LOAD WINDING) THERMAL RELAY.
- 50. INSTANTANEOUS OVERCURRENT RELAY.
- 51. AC TIME OVERCURRENT RELAY.
- 52. AL. CONTROLLED OVERCURRENT RELAY.
- 53. EXCITER OR DC GENERATOR RELAY.
- 54. TURNING GEAR ENGAGING DEVICE.
- 55. POWER FACTOR RELAY.
- 56. FIELD APPLICATION RELAY.
- 57. SHORT CIRCUITING OR GROUNDING DEVICE.
- 58. RECTIFIER FAILURE RELAY.
- 59. OVERVOLTAGE RELAY.
- 60. VOLTAGE BALANCE RELAY.
- 61. GAS DENSITY SWITCH.
- 62. TIME DELAY STOPPING OR OPENING RELAY.
- 63. LIQUID OR GAS SUDDEN PRESSURE RELAY. (MANUAL RESET).
- 64. GROUND PROTECTION RELAY (UNDERVOLTAGE = INSULATION FAILURE).
- 65. GOVERNOR.
- 66. MACHINING OR JOGGING DEVICE.
- 67. AC DIRECTIONAL OVERCURRENT RELAY.
- 68. BLOCKING RELAY.
- 69. PERMISSIVE CONTROL DEVICE.
- 70. ELECTRICALLY CONTROLLED RHEOSTAT.
- 71. LEVEL SWITCH.
- 72. DC CIRCUIT BREAKER.
- 73. LOAD RESISTOR CONTACTOR.
- 74. ALARM RELAY. (ALARMS OTHER THAN ANNUNCIATOR, DEVICE 30).
- 75. POSITION CHANGING MECHANISM.
- 76. DC OVERCURRENT RELAY.
- 77. TELEMETERING DEVICE.
- 78. PHASE ANGLE MEASURING OR OUT-OF-STEP RELAY.
- 79. AC RECLOSING RELAY.
- 80. FLOW SWITCH.
- 81. FREQUENCY RELAY.
- 82. DC RECLOSING RELAY.
- 83. AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY.
- 84. OPERATING MECHANISM.
- 85. CARRIER OR PILOT WIRE RECEIVER RELAY.
- 86. LOCKOUT AUXILIARY RELAY. (MANUAL RESET).
- 87. DIFFERENTIAL PROTECTIVE RELAY.
- 88. AUXILIARY MOTOR OR MOTOR GENERATOR.
- 89. LINE SWITCH.
- 90. REGULATING DEVICE.
- 91. VOLTAGE DIRECTIONAL RELAY.
- 92. VOLTAGE AND POWER DIRECTIONAL RELAY.
- 93. FIELD CHANGING CONTACTOR.
- 94. TRIPPING OR TRIP FREE RELAY.
- 95. OPEN FOR SPECIFIC APPLICATIONS.
- 96. OPEN FOR SPECIFIC APPLICATIONS.
- 97. OPEN FOR SPECIFIC APPLICATIONS.
- 98. OPEN FOR SPECIFIC APPLICATIONS.
- 99. OPEN FOR SPECIFIC APPLICATIONS.

DEVICE SUFFIX DESIGNATIONS:

- A = AIR.
- B = BUS.
- C = CURRENT.
- CS = CONTROL SWITCH.
- E = ELECTRIC.
- F = FREQUENCY.
- G = GROUND. CONNECTION ON NEUTRAL OF WYE POWER TRANSFORMER.
- GS = GROUND SENSOR. ZERO SEQUENCE WINDOW TYPE CT ENCLOSING ALL PHASE CONDUCTORS AND NO GROUND PATH.
- HR = HAND RESET.
- J = DIFFERENTIAL.
- L = LIQUID, LEVEL, OR LINE.
- M = MANUAL.
- N = RESIDUAL CURRENT CONNECTION ON WYE OF THREE 1Ø CTS.
- P = POWER.
- PR = PRESSURE RELIEF.
- O = OIL.
- S = SYNCHRONIZING.
- T = TEMPERATURE OR TRANSFORMER.
- 2 = SEQUENTIAL NUMBER OF IDENTICAL UNITS.
- V = VOLTAGE.
- X = AUXILIARY (ENERGIZING) RELAY.
- Y = AUXILIARY (ANTI-PUMPING) RELAY.
- Z = AUXILIARY RELAY.

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REFERENCES	DESCRIPTION	NO.	DATE	BY	CHKD	ENGR	PROJ	DESCRIPTION
WA-E-001	ABBREVIATIONS & ACRONYMS							
WA-E-002	STANDARD PLAN SYMBOLS							
WA-E-003	SCHEMATIC & WIRING SYMBOLS							

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ELECTRICAL STANDARD ONE & THREE LINE DIAGRAM SYMBOLS

WA-E-004