ANSI Standard Device Numbers & Common Acronyms

Suffixes	Description
_1	Positive-Sequence
_2	Negative-Sequence
Α	Alarm, Auxiliary Power
AC	Alternating Current
AN	Anode
В	Bus, Battery, or Blower
BF	Breaker Failure
BK	Brake
BL	Block (Valve)
BP	Bypass
BT	Bus Tie
BU	Backup
С	Capacitor, Condenser, Compensator, Carrier Current, Case, or Compressor
CA	Cathode
СН	Check (Valve)
D	Discharge (Valve)
DC	Direct Current
DCB	Directional Comparison Blocking
DCUB	Directional Comparison Unblocking
DD	Disturbance Detector
DUTT	Direct Underreaching Transfer Trip
E	Exciter
F	Feeder, Field, Filament, Filter, or Fan
G	Ground or Generator
GC	Ground Check
Н	Heater or Housing
L	Line or Logic
М	Motor or Metering
MOC	Mechanism Operated Contact
N	Neutral or Network
0	Over
Р	Phase or Pump
PC	Phase Comparison
POTT	Pott: Permissive Overreaching Transfer Trip
PUTT	Putt: Permissive Underreaching Transfer Trip
R	Reactor, Rectifier, or Room
S	Synchronizing, Secondary, Strainer, Sump, or Suction (Valve)
SOTF	Switch On To Fault
Т	Transformer or Thyratron
TD	Time Delay
TDC	Time-Delay Closing Contact
TDDO	Time Delayed Relay Coil Drop-Out

Suffixes	Description	
TDO	Time-Delay Opening Contact	
TDPU	Time Delayed Relay Coil Pickup	
THD	Total Harmonic Distortion	
ТН	Transformer (High-Voltage Side)	
TL	Transformer (Low-Voltage Side)	
ТМ	Telemeter	
TT	Transformer (Tertiary-Voltage Side)	
U	Under or Unit	
Х	Auxiliary	
Z	Impedance	

Acronyms	Description		
AFD	Arc Flash Detector		
CLK	Clock or Timing Source		
CLP	Cold Load Pickup		
DDR	Dynamic Disturbance Recorder		
DFR	Digital Fault Recorder		
ENV	Environmental Data		
HIZ	High Impedance Fault Detector		
HMI	Human Machine Interface		
HST	Historian		
MET	Substation Metering		
PDC	Phasor Data Concentrator		
PMU	Phasor Measurement Unit		
PQM	Power Quality Monitor		
RIO	Remote Input/Output Device		
RTD	Resistance Temperature Detector		
RTU	Remote Terminal Unit / Data Concentrator		
SER	Sequence of Events Recorder		
TCM	Trip Circuit Monitor		
VTFF	Vt Fuse Fail		

ANSI Standard Device Numbers & Common Acronyms

Device No.	Description	Device No.	Description
1	Master Element	33	Position Switch
2	Time Delay Starting or Closing Relay	34	Master Sequence Device
3	Checking or Interlocking Realy	35	Brush-Operating or Slip-ring Short Circuiting Device
4	Master Contactor	36	Polarity or Polarizing Voltage Device
5	Stopping Device	37	Undercurrent or Underpower Relay
6	Starting Circuit Breaker	37P	Underpower
7	Rate of Change Relay	38	Bearing Protective Device / Bearing Rtd
8	Control Power Disconnecting Device	39	Mechanical Condition Monitor
9	Reversing Device	40	Field Relay / Loss of Excitation
10	Unit Sequence Switch	41	Field Circuit Breaker
11	Multifunction Device	42	Running Circuit Breaker
12	Overspeed Device/Protection	43	Manual Transfer or Selector Device
13	Synchronous-Speed Device	44	Unit Sequence Starting Relay
14	Underspeed Device	45	Atmospheric Condition Monitor
15	Speed or Frequency Matching Device	46	Reverse-Phase or Phase Balance Current Relay or Stator
16	Communication Networking Device		Current Unbalance
17	Shunting or Discharge Switch	47	Phase-Sequence or Phase Balance Voltage Relay
18	Accelerating or Decelerating Device	48	Incomplete Sequence Relay / Blocked Rotor
19	Motor Starter / Starting-to-Running Transition Contactor	49	Machine or Transformer Thermal Relay / Thermal Overload
20	Electrically-Operated Valve	49RTD	RTD Biased Thermal Overload
21	Distance Relay	50	Instantaneous Overcurrent Relay
21G	Ground Distance	50BF	Breaker Failure
21P	Phase Distance	50DD	Current Disturbance Detector
22	Equalizer Circuit Breaker	50G	Ground Instantaneous Overcurrent
23	Temperature Control Device	50N	Neutral Instantaneous Overcurrent
24	Volts-per-Hertz Relay / Overfluxing	50P	Phase Instantaneous Overcurrent
25	Synchronizing or Synchronism-Check Device	50_2	Negative Sequence Instantaneous Overcurrent
26	Apparatus Thermal Device	50/27	Accidental Energization
27	Undervoltage Relay	50/74	Ct Trouble
27P	Phase Undervoltage	50/87	Instantaneous Differential
27TN	Third Harmonic Neutral Undervoltage	50EF	End Fault Protection
27X	Auxiliary Undervoltage	50IG	Isolated Ground Instantaneous Overcurrent
27 AUX	Undervoltage Auxiliary Input	50LR	Acceleration Time
27/27X	Bus/Line Undervoltage	50NBF	Neutral Instantaneous Breaker Failure
28	Flame Detector	50SG	Sensitive Ground Instantaneous Overcurrent
29	Isolating Contactor	50SP	Split Phase Instantaneous Current
30	Annunciator Relay	51	Ac Time Overcurrent Relay
31	Separate Excitation Device	51	Overload
32	Directional Power Relay	51G	Ground Time Overcurrent
32L	Low Forward Power	51N	Neutral Time Overcurrent
32N	Wattmetric Zero-Sequence Directional	51P	Phase Time Overcurrent
32P	Directional Power	51V	Voltage Restrained Time Overcurrent
32R	Reverse Power	51R	Locked / Stalled Rotor

Device No.	Description			
51_2	Negative Sequence Time Overcurrent			
52	Ac Circuit Breaker			
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	Rectification Failure Relay			
59	Overvoltage Relay			
59B	Bank Phase Overvoltage			
59P	Phase Overvoltage			
59N	Neutral Overvoltage			
59NU	Neutral Voltage Unbalance			
59P	Phase Overvoltage			
59X	Auxiliary Overvoltage			
59_2	Negative Sequence Overvoltage			
60	Voltage or Current Balance Relay			
60N	Neutral Current Unbalance			
60P	Phase Current Unbalance			
61	Density Switch or Sensor			
62	Time-Delay Stopping or Opening Relay			
63	Pressure Switch Detector			
64	Ground Protective Relay			
64F	Field Ground Protection			
64S	Sub-harmonic Stator Ground Protection			
64TN	100% Stator Ground			
65	Governor			
66	Notching or Jogging Device/Maximum Starting Rate/Starts Per Hour/Time Between Starts			
67	Ac Directional Overcurrent Relay			
67G	Ground Directional Overcurrent			
67N	Neutral Directional Overcurrent			
67P	Phase Directional Overcurrent			
67SG	Sensitive Ground Directional Overcurrent			
67_2	Negative Sequence Directional Overcurrent			
68	Blocking Relay / Power Swing Blocking			
69	Permissive Control Device			
70	Rheostat			
71	Liquid Switch			
72	Dc Circuit Breaker			
73	Load-Resistor Contactor			
74	Alarm Relay			
75	Position Changing Mechanism			

76Dc Overcurrent Relay77Telemetering Device78Phase Angle Measuring or Out-of-Step Protective Relay78VLoss of Mains79Ac Reclosing Relay / Auto Reclose80Liquid or Gas Flow Relay81Frequency Relay810Over Frequency811Rate-of-Change Frequency812Dc Reclosing Relay83Automatic Selective Control or Transfer Relay84Operating Mechanism85Carrier or Pilot-Wire Receiver Relay86Locking-Out Relay87Differential876Generator Differential877Generator Differential878Bus Differential875Stator Differential876Ground Line Current Differential877Sigregated Line Current Differential878Percent Differential879Overall Differential870Overall Differential871Transformer Differential872Percent Differential874Motor Differential875Restricted Ground Fault876Restricted Ground Fault877Transformer Differential878Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Differential87Sider Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision <trr>27/50Accidental Generato</trr>	Device No.	Description		
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84Operating Mechanism85Carrier or Pilot-Wire Receiver Relay86Locking-Out Relay87Differential Protective Relay87Bus Differential876Generator Differential877Generator Differential876Generator/Transformer Differential877Generator/Transformer Differential878Stator Differential875Stator Differential875Percent Differential876Segregated Line Current Differential877Segregated Line Current Differential878Percent Differential870Overall Differential877Phase Comparison8786Restricted Ground Fault877Transformer Differential877Transformer Differential878Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27/50Motor Earth Fault	83	Automatic Selective Control or Transfer Relay		
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86Locking-Out Relay87Differential Protective Relay87BBus Differential87GGenerator Differential87GGenerator/Transformer Differential87GGround Line Current Differential87SStator Differential87SPercent Differential87LSegregated Line Current Differential87MMotor Differential87OOverall Differential87PCPhase Comparison87RGFRestricted Ground Fault87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay27/50Accidental Generator Energization277N/59N100% Stator Earth Fault	85	Carrier or Pilot-Wire Receiver Relay		
87Differential Protective Relay87BBus Differential87GGenerator Differential87GGenerator/Transformer Differential87LGround Line Current Differential87SStator Differential87SPercent Differential87LSegregated Line Current Differential87MMotor Differential87OOverall Differential87PCPhase Comparison87RGFRestricted Ground Fault87VVoltage Differential87VVoltage Differential89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay27/50Accidental Generator Energization27/5N100% Stator Earth Fault	86	Locking-Out Relay		
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87GTGenerator/Transformer Differential87LGGround Line Current Differential87SStator Differential87SPercent Differential87LSegregated Line Current Differential87MMotor Differential87OOverall Differential87DPhase Comparison87RGFRestricted Ground Fault87VVoltage Differential87VVoltage Differential87Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27/50100% Stator Earth Fault	87G	Generator Differential		
87LGGround Line Current Differential87SStator Differential87SPercent Differential87LSegregated Line Current Differential87MMotor Differential87OOverall Differential87PCPhase Comparison87RGFRestricted Ground Fault87VVoltage Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27/59N100% Stator Earth Fault	87GT	Generator/Transformer Differential		
875Stator Differential875Percent Differential871Segregated Line Current Differential871Motor Differential870Overall Differential870Phase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential87Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	87LG	Ground Line Current Differential		
87SPercent Differential87LSegregated Line Current Differential87MMotor Differential87MMotor Differential870Overall Differential877Phase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27/50100% Stator Earth Fault	87S	Stator Differential		
87LSegregated Line Current Differential87MMotor Differential87OOverall Differential87OPhase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27N/59N100% Stator Earth Fault	87S	Percent Differential		
87MMotor Differential87OOverall Differential87OPhase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential87WVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27/59N100% Stator Earth Fault	87L	Segregated Line Current Differential		
870Overall Differential87PCPhase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization277N/59N100% Stator Earth Fault	87M	Motor Differential		
87PCPhase Comparison87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization277N/59N100% Stator Earth Fault	870	Overall Differential		
87RGFRestricted Ground Fault87TTransformer Differential87VVoltage Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	87PC	Phase Comparison		
87TTransformer Differential87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	87RGF	Restricted Ground Fault		
87VVoltage Differential88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	87T	Transformer Differential		
88Auxiliary Motor or Motor Generator89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	87V	Voltage Differential		
89Line Switch90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	88	Auxiliary Motor or Motor Generator		
90Regulating Device91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	89	Line Switch		
91Voltage Directional Relay92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	90	Regulating Device		
92Voltage And Power Directional Relay93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	91	Voltage Directional Relay		
93Field-Changing Contactor94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	92	Voltage And Power Directional Relay		
94Tripping or Trip-Free Relay50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	93	Field-Changing Contactor		
50/74Ct Supervision27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	94	Tripping or Trip-Free Relay		
27/50Accidental Generator Energization27TN/59N100% Stator Earth Fault	50/74	Ct Supervision		
27TN/59N 100% Stator Earth Fault	27/50	Accidental Generator Energization		
	27TN/59N	100% Stator Earth Fault		